

## AUTHOR INDEX

- Abboud, C.N., 31  
 Abrams, S.L., 118  
 Ahlgren, J.D., 241  
 Allay, J.A., 46  
 Alter, C.A., 229  
 Althausen, A.F., 614  
 Arca, M.J., 108  
  
 Bales, G.T., 605  
 Bane, B.L., 546  
 Baron, P.L., 714, 719  
 Belair, C.D., 571  
 Belli, J., 292  
 Berd, D., 4, 22  
 Berd, D., 773  
 Belloch, R.H., 571  
 Bonadonna, G., 413, 464  
 Bookstein, R., 66  
 Brennan, M.F., 352  
  
 Calabretta, B., 78  
 Cannon-Albright, L.A., 667  
 Chak, A., 336  
 Chang, A.E., 108  
 Chatterjee, S., 159  
 Chen, S.Y., 148  
 Cole, D.J., 719, 754  
 Conlon, K.C., 347  
 Conry, R.M., 135  
 Cooper, M.J., 172  
 Curiel, D.T., 135  
 Cuthill, S., 571  
  
 Davis, B.M., 46  
 De Potter, P., 763, 768  
 Demers, W., 66  
 Dhingra, K., 436  
 Donoso, L.A., 768  
 Douglas, R.M., 614  
 Driscoll, M.S., 734  
  
 Eisenlohr, L.A., 88  
 El Kassas, H., 737  
 Elder, D., 682  
 Elwood, J.M., 650  
  
 Fenoglio-Preiser, C.M., 292  
 Fisher, B., 414  
 Freeman, J.L., 31  
 Freeman, S.M., 31  
 Fukushima, M., 369  
 Fusaro, L.R., 251  
 Fusaro, R.M., 251  
  
 Garrison, M., 725  
 Gattoni-Celli, S., 754  
 Gelber, R.D., 494  
 Gerson, S.L., 1, 46  
 Gerwitz, A.M., 78  
  
 Ghadirian, P., 251  
 Gilboa, E., 101  
 Goldhirsch, A., 494  
 Grant-Kels, J.M., 734  
 Gregory, R., 66  
 Grin, C.M., 734  
  
 Halaban, R., 673  
 Halvorsen, R.A.Jr., 325  
 Hand, P.H., 118  
 Harris, J.R., 453  
 Hart, I.R., 154  
 Hayek, M., 281  
 Hemstreet, G.P., 546  
 Henderson, I.C., 506  
 Heney, N.M., 614  
 Hortobagyi, G.N., 436  
 Howe, G., 281  
 Hrubian, R.H., 251  
 Hudis, C.A., 475  
 Huebner, K., 22  
  
 Jenrette, J.M., 759  
 Jones, P.A., 536  
  
 Kamb, A., 667  
 Karpeh, M.S.Jr., 347, 352  
 Katai, H., 360  
 Kaufman, D.S., 614  
 Keller, J.M., 693  
 Kelsen, D.P., 279, 379  
 Kenady, D.E., 200  
 Kern, S.E., 251  
 Kim, H., 605  
 Kinoshita, T., 360  
 Kirwood, J.M., 737  
 Kmiec, E.B., 188  
 Koc, O.N., 46  
 Kryger, J.V., 585  
  
 Lamm, D.L., 598  
 Lattime, E.C., 1, 4, 88  
 Lee, K., 46  
 Lee, S.S., 88  
 Lemon, S.J., 251  
 Lightdale, C.J., 251  
 LoBuglio, A.F., 135  
 Lu, D., 159  
 Lubinski, J., 22  
 Lynch, H.T., 251  
 Lynch, J.F., 251  
  
 Macdonald, J.S., 199, 220  
 Maguire, H.C.Jr., 22, 773  
 Maize, J.C., 693  
 Maneval, D., 66  
 Marasco, W.A., 148  
 Marrogi, A.J., 31  
 Mastrangelo, M.J., 4, 88, 773  
  
 McCarthy, W.H., 709  
 McClay, E.F., 649, 744  
 McClay, M.E.T., 744  
 McCormick, V.D., 325  
 McGrath, P.C., 200  
 Meruyama, K., 360  
 Messing, E., 585  
 Metcalf, J.S., 688  
 Minsky, B.D., 390  
 Mule, J.J., 108  
  
 Nathan, F., 773  
 Nathan, F.E., 4  
 Nathanson, L., 725  
 Neugut, A.I., 281  
 Nixon, A., 453  
 Noffsinger, A.E., 292  
 Norton, L., 475  
 Nseyo, U.O., 598  
  
 Ohta, M., 22  
  
 Page, D.L., 428  
 Park, J., 66  
 Pollack, B.J., 336  
 Puthenvettil, J.A., 571  
  
 Rao, J.Y., 546  
 Ratajczak, M.Z., 78  
 Reese, J.S., 46  
 Reznikoff, C.A., 571  
 Rivers, J.K., 709  
 Ross, R.K., 536  
 Roth, B.J., 633  
  
 Sagabiel, R.W., 703  
 Sano, T., 360  
 Sasako, M., 360  
 Sato, T., 773  
 Savelieva, E., 571  
 Scher, H.I., 535  
 Schlom, J., 118  
 Schnall, S.F., 220  
 Schwartz, G.K., 316  
 Semba, S., 307  
 Seykora, J., 682  
 Shaughnessy, E., 159  
 Shaw, H.M., 709  
 Shields, C.L., 763, 768  
 Shields, J.A., 763, 768  
 Shipley, W.U., 614  
 Simpson, J.F., 428  
 Singh, A.D., 763, 768  
 Sivak, M.V.Jr., 336  
 Skolnick, M., 667  
 Skorski, T., 78  
 Sloan, D.A., 200  
 Smith, G., 506  
 Smyrk, T., 251

## AUTHOR INDEX

- Abboud, C.N., 31  
 Abrams, S.L., 118  
 Ahlgren, J.D., 241  
 Allay, J.A., 46  
 Alter, C.A., 229  
 Althausen, A.F., 614  
 Arca, M.J., 108  
  
 Bales, G.T., 605  
 Bane, B.L., 546  
 Baron, P.L., 714, 719  
 Belair, C.D., 571  
 Belli, J., 292  
 Berd, D., 4, 22  
 Berd, D., 773  
 Belloch, R.H., 571  
 Bonadonna, G., 413, 464  
 Bookstein, R., 66  
 Brennan, M.F., 352  
  
 Calabretta, B., 78  
 Cannon-Albright, L.A., 667  
 Chak, A., 336  
 Chang, A.E., 108  
 Chatterjee, S., 159  
 Chen, S.Y., 148  
 Cole, D.J., 719, 754  
 Conlon, K.C., 347  
 Conry, R.M., 135  
 Cooper, M.J., 172  
 Curiel, D.T., 135  
 Cuthill, S., 571  
  
 Davis, B.M., 46  
 De Potter, P., 763, 768  
 Demers, W., 66  
 Dhingra, K., 436  
 Donoso, L.A., 768  
 Douglas, R.M., 614  
 Driscoll, M.S., 734  
  
 Eisenlohr, L.A., 88  
 El Kassas, H., 737  
 Elder, D., 682  
 Elwood, J.M., 650  
  
 Fenoglio-Preiser, C.M., 292  
 Fisher, B., 414  
 Freeman, J.L., 31  
 Freeman, S.M., 31  
 Fukushima, M., 369  
 Fusaro, L.R., 251  
 Fusaro, R.M., 251  
  
 Garrison, M., 725  
 Gattoni-Celli, S., 754  
 Gelber, R.D., 494  
 Gerson, S.L., 1, 46  
 Gerwitz, A.M., 78  
  
 Ghadirian, P., 251  
 Gilboa, E., 101  
 Goldhirsch, A., 494  
 Grant-Kels, J.M., 734  
 Gregory, R., 66  
 Grin, C.M., 734  
  
 Halaban, R., 673  
 Halvorsen, R.A.Jr., 325  
 Hand, P.H., 118  
 Harris, J.R., 453  
 Hart, I.R., 154  
 Hayek, M., 281  
 Hemstreet, G.P., 546  
 Henderson, I.C., 506  
 Heney, N.M., 614  
 Hortobagyi, G.N., 436  
 Howe, G., 281  
 Hrubian, R.H., 251  
 Hudis, C.A., 475  
 Huebner, K., 22  
  
 Jenrette, J.M., 759  
 Jones, P.A., 536  
  
 Kamb, A., 667  
 Karpeh, M.S.Jr., 347, 352  
 Katai, H., 360  
 Kaufman, D.S., 614  
 Keller, J.M., 693  
 Kelsen, D.P., 279, 379  
 Kenady, D.E., 200  
 Kern, S.E., 251  
 Kim, H., 605  
 Kinoshita, T., 360  
 Kirwood, J.M., 737  
 Kmiec, E.B., 188  
 Koc, O.N., 46  
 Kryger, J.V., 585  
  
 Lamm, D.L., 598  
 Lattime, E.C., 1, 4, 88  
 Lee, K., 46  
 Lee, S.S., 88  
 Lemon, S.J., 251  
 Lightdale, C.J., 251  
 LoBuglio, A.F., 135  
 Lu, D., 159  
 Lubinski, J., 22  
 Lynch, H.T., 251  
 Lynch, J.F., 251  
  
 Macdonald, J.S., 199, 220  
 Maguire, H.C.Jr., 22, 773  
 Maize, J.C., 693  
 Maneval, D., 66  
 Marasco, W.A., 148  
 Marrogi, A.J., 31  
 Mastrangelo, M.J., 4, 88, 773  
  
 McCarthy, W.H., 709  
 McClay, E.F., 649, 744  
 McClay, M.E.T., 744  
 McCormick, V.D., 325  
 McGrath, P.C., 200  
 Meruyama, K., 360  
 Messing, E., 585  
 Metcalf, J.S., 688  
 Minsky, B.D., 390  
 Mule, J.J., 108  
  
 Nathan, F., 773  
 Nathan, F.E., 4  
 Nathanson, L., 725  
 Neugut, A.I., 281  
 Nixon, A., 453  
 Noffsinger, A.E., 292  
 Norton, L., 475  
 Nseyo, U.O., 598  
  
 Ohta, M., 22  
  
 Page, D.L., 428  
 Park, J., 66  
 Pollack, B.J., 336  
 Puthenveetil, J.A., 571  
  
 Rao, J.Y., 546  
 Ratajczak, M.Z., 78  
 Reese, J.S., 46  
 Reznikoff, C.A., 571  
 Rivers, J.K., 709  
 Ross, R.K., 536  
 Roth, B.J., 633  
  
 Sagabiel, R.W., 703  
 Sano, T., 360  
 Sasako, M., 360  
 Sato, T., 773  
 Savelieva, E., 571  
 Scher, H.I., 535  
 Schlom, J., 118  
 Schnall, S.F., 220  
 Schwartz, G.K., 316  
 Semba, S., 307  
 Seykora, J., 682  
 Shaughnessy, E., 159  
 Shaw, H.M., 709  
 Shields, C.L., 763, 768  
 Shields, J.A., 763, 768  
 Shipley, W.U., 614  
 Simpson, J.F., 428  
 Singh, A.D., 763, 768  
 Sivak, M.V.Jr., 336  
 Skolnick, M., 667  
 Skorski, T., 78  
 Sloan, D.A., 200  
 Smith, G., 506  
 Smyrk, T., 251

- Stadler, W., 533  
 Steinberg, G.D., 605  
 Stemmermann, G.M., 292  
 Sternberg, C.N., 621  
 Tahara, E., 307  
 Tahara, H., 307  
 Thomas, P.R.M., 213  
 Thompson, J.F., 709  
 Troyan, S., 453  
 Tsang, K.Y., 118  
 Valagussa, P., 464  
 Vogelzang, N., 533  
 Wang, M.X., 768  
 Whartenby, K.A., 31  
 Wills, K., 66  
 Wils, J., 397  
 Wong, K.K., 159  
 Wood, W.C., 446  
 Yeager, T.R., 571  
 Yee, J., 325  
 Yu, M.C., 536  
 Zietman, A.L., 614

## SUBJECT INDEX

- Aminobiphenyl  
 exposure to, bladder cancer risk of, 537  
 hemoglobin adduct level of, 540  
 AB2, 777  
 Abelson leukemia virus, 34  
 ABL, functional classification of, 6  
 Acetaminophen, in pancreatic cancer, 234  
 Aclacinomycin, as single-agent chemotherapy, in pancreatic cancer, 221  
 ACN53 therapy, clinical studies of, 72  
 Acral lentiginous melanoma  
 characterization of, 705  
 epidemiology of, 705  
 plantar variant of, 706  
 subungual variant of, 705-706  
 therapeutic implications in, 706  
 Actin, in tumor cell invasion, 319  
 Active specific immunization  
 adjunctive, randomized trials of, 774  
 antigen supplemented tumor cell vaccines in, 776  
 cyclophosphamide immunopotentiality of, 774-775  
 with defined immunogens, 777  
 in melanoma, 773-781  
 Adeno-associated virus, 11  
 for gene therapy, 160-161  
 Adenocarcinoma  
 of pancreas, 220-228  
 of stomach, see Gastric cancer  
 Adenomatous polyposis coli, 264  
 Adenomatous polyposis coli gene, in gastric cancer, 309  
 Adenoviral vector, 55  
 for p53 gene delivery, 68-70  
 Adenovirus, generating recombinant, 69  
 Adjuvant therapy  
 evolution of, in breast cancer, 418-420  
 guiding principles of, 476  
 in gastric cancer, 379-389  
 patient selection for, 380-381  
 postoperative, timing of, 381  
 postoperative regimens for, 381  
 prognostic factor guideline for, 442  
 radiotherapy plus, in pancreatic cancer, 214  
 recurrence following, 476-478  
 selection of, 482-483  
 Adoptive cellular therapy  
 genetic approaches to, 108-117  
 Adoptive cellular therapy (*Continued*)  
 history of, 108-109  
 Adrenalectomy  
 in breast cancer, 497  
 mechanism of action of, 496  
 Adriamycin, see Doxorubicin  
 Age  
 breast-conserving therapy and, 457-458  
 chemotherapy and, 482  
 gastric cancer incidence by, 282  
 for females, 285  
 for males, 285  
 in melanoma, 728  
 Agency for Health Care Policy and Research, pain guidelines of, 232  
 Alcohol, familial pancreatic cancer and, 252  
 Aldehyde dehydrogenase, 49-50  
 Allogeneic bone marrow transplantation, HSV-TK in, 40  
 Alpha FGF oncogene, in bladder cancer, 578  
 Alpha-catenin, in gastric cancer, 309-310  
 Alpha-interferon, fluorouracil, cisplatin regimen, in bladder cancer, 640  
 Alpha-tocopherol, gastric cancer and, 285-287  
 American Joint Committee Cancer staging, of melanoma, 729-730  
 Amines, aromatic, as bladder cancer risk, 589  
 Aminoglutethimide, 501, 519  
 Amplification, oncogene activation by, 28-29  
 Amsacrine, as single-agent chemotherapy, in pancreatic cancer, 221  
 Analgesia  
 patient controlled, 235-236  
 side effects of, 236-237  
 Analgesics, as bladder cancer risk factor, 539-540  
 Androgens  
 in breast cancer, 498  
 mechanism of action of, 496  
 Anemia, pernicious, familial pancreatic cancer and, 259-260  
 Angiogenesis  
 animal tumor modeling of, 465  
 in breast cancer, 439  
 Aniline, exposure to, bladder cancer risk of, 537  
 Anthracenediones, 515-516  
 Anthracycline agents, in pancreatic cancer, 222  
 Anti-ras effector mechanism, 121-122

- Antiandrogens, 502
  - mechanism of action of, 496
- Antibody-T cell receptor complex, chimeric, 114
- Antiestrogens
  - mechanism of action of, 496
  - without estrogenic activity, 499-500
- Antifolates, 516-517
- Antigen(s)
  - gene transfer, 17
  - melanoma differentiation, 755-756
  - melanoma-associated tumor, 755
  - 17-1A, 16
  - tumor, autoreactivity and, 756-757
- Antigen-presenting cell, 755, 89
- Antiprogestins, 502
  - mechanism of action of, 496
- Antisense therapy, 13
- Antisense transcript, 164-165
- Antitumor immunity, modulation of, 166-167
- Antrum, gastric cancer in, 293
- APC, tumors associated with, 8
- Apoptosis
  - characterization of, 34
  - chimeric molecule and, 191
  - in gastric cancer, 311
- ARA-C, see Cytarabine
- Armindex, 520
- Aromatase inhibitors, 500-501
  - mechanism of action of, in breast cancer, 496
- Arsenic, exposure to, bladder cancer risk of, 539-540
- Arylamine(s)
  - induced bladder cancer pathogenesis, 538
  - exposure to, bladder cancer risk of, 537
- Ascorbate, gastric cancer and, 285-287
- Aspirin, in pancreatic cancer, 234
- Autocrine growth, 675
- Autocrine growth loop, 246
- Autocrine motility factor, in tumor cell invasion, 319
- Autoreactivity, tumor antigen and, 756-757
- Axillary dissection
  - for ductal carcinoma in situ, 451
  - need for, 459
  - optimal extent of, 459
  - survival following, 458-459
- AZQ, as single-agent chemotherapy, in pancreatic cancer, 221
  
- B7, 89-91
- B7-CD28, 17
- Bacillus Calmette-Guerin
  - bladder cancer recurrence and, 600
  - in bladder cancer, 599-601
  - complications of, 601
  - injection of, 88-89
  - vaccine, autologous whole tumor cell plus, with cyclophosphamide, 773-775
- Balloon cell, 691
- BCL-2 gene
  - functional classification of, 6
  - targets for, 192
- BCNU, see Carmustine
- BCR-ABL transcript, targeting of, 79
  
- Benzidine, exposure to, bladder cancer risk of, 573
- Beta carotene, gastric cancer and, 286-287
- Beta-catenin, in gastric cancer, 309-310
- Beta-glucosidase, 33
- Beta-lactamase, 33
- Betulinic acid, in metastatic melanoma, 745-746
- Biliary drainage, preoperative, 203
- Biliary-enteric bypass, 208
- Biologic therapy, in pancreatic cancer, 225
- Biological response modifier, in gastric cancer, 373-374
- Biomarker(s)
  - biological, for screening, in bladder cancer, 594
  - classification of, 561
  - for screening, 564-565
  - for therapy selection, 566
  - general concepts of, 562
  - in bladder cancer, 560-561
  - of tumor progression, 567
  - risk category profile of, 561
  - selection of, for clinical evaluation, 562-563
- Biopsy
  - CT-guided transmural core, 559
  - excisional, of nevus, 715
  - indications for, in melanoma, 714
  - strip, 341
  - technique for
    - in melanoma, 714-715
    - in pancreatic cancer, 202
  - transvesical needle, 559
- Biphosphonates, 522
- Bisantrene, in bladder cancer, 634
- Bladder, see Urinary bladder
- Bladder cancer
  - advanced
    - chemotherapy in, 633-644
    - staging of, radiologic methods for, 555
  - anthracenediones in, 634
  - anthracyclines in, 634
  - antifols in, 636
  - artificial sweeteners and, 539
  - Bacillus Calmette-Guerin immunotherapy in, 599-601
  - biology of, 629
  - biomarkers in, 560-561
  - bisantrene in, 634
  - characteristics of, 571-573
  - chemotherapy in, cost benefit analysis of, 629
  - chromosomal changes associated with, 542
  - chromosome regions lost or gained in, 573-574
  - cigarette smoking and, 537-539
  - cisplatin in, 633-634
  - clinical staging of, 553-555
    - diagnostic tests for, 560-561
  - cisplatin, methotrexate, vinblastine regimen in, 638
  - cisplatin, cyclophosphamide, doxorubicin regimen in, 637-638
  - cisplatin, methotrexate regimen in, 636-637
  - coffee drinking and, 539
  - combination chemotherapy in, 615, 636-640
  - combined modality therapy in, 615
  - combined neoadjuvant and adjuvant chemotherapy in, 629
  - cyclophosphamide in, 635

Bladder cancer (*Continued*)

- demographics of, 536-537
- diagnosis of, 553-555
- docetaxel in, 635
- doxorubicin in, 634
- epidemiological risk factors in, 537-540
- epidemiology of, 536-545
- epirubicin in, 634
- escalated methotrexate, vinblastine, doxorubicin, cisplatin regimen in, 639
- ethnic groupings in, 537
- etoposide in, 635
- evaluation of, 553-555
- field cancerization in, 562
- field disease in, 562
- fluorouracil, alpha-interferon, cisplatin regimen in, 640
- gallium nitrate, fluorouracil regimen in, 640
- gallium nitrate in, 636
- gemcitabine in, 636
- general histological considerations in, 546
- genetic alterations in, 573-577
  - clinical relevance of, 580
- genetics of, critical questions in, 573
- hematuria in, for screening, 590-593
- histopathology of, 542
- hyperplasia in, 546-547
- ifosfamide in, 635
- incidence of, 585, 598, 621-622
- interferon in, 601-602
- intra-arterial methotrexate, doxorubicin, cisplatin regimen in, 624
- intra-arterial neoadjuvant chemotherapy in, 624
- intravesical therapy in, 599
  - indications for, 598-599
- Jewett-Strong-Marshall classification of, 552
- locally advanced, 621-632
  - adjuvant chemotherapy in, 627-629
  - neoadjuvant chemotherapy in, 622-624
  - surgical therapy for, 605-613
- metaplasia in, 546-547
- metastatic
  - combination chemotherapy in, 622
  - radiographic staging of, 555-556
- methotrexate in, 634
- methotrexate, vinblastine, doxorubicin, cisplatin regimen in, 638-639
- mitoxantrone in, 634
- multimodality bladder preservation in, 611
- muscle-invading
  - chemoradiation in, 614-620
  - conservative surgery in, 614-620
- muscle-invasive, 559-560
- natural history of, 587-589
- occupational exposures in, 537
- oncogenes activated in, 578
- overview of, 533-534
- oxazaphosphorines in, 635
- p53 alterations in, 576
- paclitaxel in, 635
- pathogenesis of, 536-545
  - cytogenetic studies of, 542-543

Bladder cancer (*Continued*)

- molecular genetic model of, 571-584
  - molecular studies of, 543
  - pathological considerations in, 546
  - pathological staging in, 559
  - pathology of, 546-570
  - photofrin-mediated photodynamic therapy in, 602
  - pirarubicin in, 634
  - piritrexim in, 636
  - podophyllotoxin derivatives in, 635
  - possible protective factors in, 540
  - pRb alterations in, 576
  - preinvasive urothelial lesions of, 546-547
  - prognostic factors in, 629
  - progression of, proposed model for, 539
  - race in, 537
  - RB alterations in, 576
  - risk factors for, 589
  - screening for, 585-597
    - appropriateness of, 589-590
    - cost-effectiveness of, 593
    - cytology in, 593-594
    - in high-risk populations, 594-595
    - molecular biological markers in, 594
  - single-agent chemotherapy in, 633-636
  - smoking-related carcinogens in, metabolism alterations of, 540-542
  - staging of, 546-570
    - transvesical needle biopsy for, 559
  - superficial, therapy of, 598-604
  - survival in, 573
  - taxanes in, 635
  - teniposide in, 635
  - therapy in, average cost of, 629
  - TP53 alterations in, 576
  - transurethral resection in, pathological evaluation of, 556-559
  - trimetrexate in, 636
  - tumor suppressor genes associated with, 542
  - variants of, 551
  - vinblastine, ifosfamide, gallium nitrate regimen in, 640
  - vinblastine in, 634
  - vinca alkaloids in, 634-635
  - vincristine in, 634-635
  - vmorelline in, 635
- Blue nevus, 696-697
- cellular, melanoma in, 706-707
- Bone marrow, micrometastasis of, in breast cancer, 439-440
- Bone marrow transplantation
- allogenic, 40
  - with chemotherapy, 487-488
- Bone scan, in advanced bladder cancer staging, 555
- Borrmann classification, of gastric cancer, 298
- Boyden chamber, 317, 318
- BRCA1, tumors associated with, 8
- BRCA2, tumors associated with, 8
- Breast cancer
- adjuvant therapy guidelines in, 442
  - angiogenesis in, 439
  - breast conservation in, see Breast-conserving treatment
  - cathepsin D in, 439

- Breast cancer (*Continued*)
- chemotherapy in, predicting efficacy of, 440-441
  - current therapy of, 422
  - endocrine therapies in, 441, 494-505
  - growth regulators in, 438-439
  - introduction to, 413
  - invasive
    - cell proliferation in, 432-433
    - chemoradiotherapy sequencing for, 460
    - chemotherapy *v* surgery for, 471-472
    - colloid type of, 432
    - ductal, *see* Ductal carcinoma in situ
    - extensive intraductal neoplasia in, 455
    - grading in, 430-431
    - grading utility in, 431
    - histologic typing in, 431-432
    - histological grading in, 431
    - histopathology of, 430
    - infiltrating lobular, 432
    - lobular, 446-452
    - local management of, 453-463
    - medullary, 432
    - mucinous, 432
    - pleomorphic lobular, 432
    - prognostic factors in, 433
    - prognostication in, 430-433
    - staging in, 430
    - subset analysis in, 431
    - surgical timing for, 459-460
    - tubular type of, 431-432
    - wide excision surgery for, 460
  - ipsilateral recurrence of, clinical trials and, 417-418
  - kinetic model in, 488-489
  - margin evaluation in, 455-456
  - mastectomy in, 422
  - micrometastases in, 436-440
  - molecular markers in, 437-440
  - morphologic markers in, 436-440
  - neu* overexpression in, 438
  - new treatments for, 506-528
  - nonrandomized trials in, 467-468
  - operable
    - adjuvant drug therapy for, 475-493
    - primary chemotherapy in, 464-474
    - risk assessment in, 483-484
  - palliative therapy of, 521-523
  - plasminogen activator inhibitor in, 439
  - premalignancy in, 428-435
  - prevention of, tamoxifen for, 423-424
  - prognostic factors in, 429, 437
  - prognostic markers in, 421-422, 441
  - proteases in, 438-439
  - randomized trials in, 466
  - research progress in, 414-427
  - urokinase-type plasminogen activator in, 439
- Breast-conserving treatment, 453-454
- contraindications to, 456-457
  - cosmetic results of, 458
  - mastectomy *v*, 454
  - patient selection for, 454-457
  - selection of, 457-458
- Brunn's nests, 547, 551
- Buserelin, 497, 502, 520
- Bystander effect, 34
- in vivo* mechanism of action of, 36-38
- C-erbB-2, in breast cancer, 429, 433
- C-met gene, in gastric cancer, 311-312
- C-MYB transcript, targeting of, 79-81
- C-myc, in breast cancer, 438
- CA 19-9, in pancreatic cancer, 203
- Cadherins, in tumor cell invasion, 319
- Canji adenovirus construct, 70-71
- Capsid, definition of, 6
- Carcinoembryonic antigen immunization, 136-137
- dosing of, 137-138
  - plasmid, 138
  - route of, 138-139
- Carcinogenesis, multistep, 562
- Cardia
- cancer incidence in, 282-284, 286
  - gastric cancer in, 293
- Carmofur, as single-agent chemotherapy, in pancreatic cancer, 221
- Carmustine, 222
- in combination chemotherapy, for pancreatic cancer, 223-224
  - in metastatic melanoma, 745
- Carmustine, dacarbazine, cisplatin, tamoxifen regimen, in metastatic melanoma, 746-748
- Carmustine, dacarbazine, cisplatin, tamoxifen, interferon- $\alpha$  regimen, in metastatic melanoma, 750
- Carmustine, dacarbazine, cisplatin, tamoxifen, interleukin-2, interferon regimen, in metastatic melanoma, 750
- Carmustine, dacarbazine, megestrol, cisplatin regimen, in metastatic melanoma, 749
- Cathepsin, in tumor cell invasion, 319
- Cathepsin-B, 320
- Cathepsin-D, in breast cancer, 439
- Cathepsin-L, 320
- Catheter probe, 342
- Cationic lipid-mediated gene transfer, 73-74
- CCNU, *see* Lomustine
- CD, 33, 39-40
- CD28 receptor, 17
- CD4+
- human anti-ras, T-cell line, cytokine production by, 130
  - human anti-ras Val 12, T-cell line, cytotoxic activity by, 130
  - murine anti-ras, T cell responses, 122, 123, 125-127
  - T cell response, from normal individuals, 129-130
- CD8+
- human, cytotoxic T-lymphocyte responses, to point-mutated ras, 130-131
  - murine anti-ras, T cell responses, 122, 123, 127-129
- CD44, in gastric cancer, 312
- CDKN2 gene, 27, 543
- MLM and, 669-770
- CDKN2-p16, 577-580
- CEA, *see* Carcinoembryonic antigen
- Celiac plexus block, 237-238
- Cell cycle, regulators of, 676-677

- Cell proliferation, in breast cancer, 432-433
- Charcoal, in gastric cancer, 375-376
- Chemical exposure, pancreatic cancer and, 245
- Chemohormonal therapy, trials of, 480
- Chemoimmunotherapy
- in gastric cancer, 373-374
  - in metastatic melanoma, 750-751
- Chemoradiotherapy
- in muscle-invasive bladder cancer, 614-620
  - organ-preserving, results following, 618
  - in postoperative adjuvant regimens, for gastric cancer, 383
  - sequencing of, for invasive breast cancer, 460
- Chemotherapy
- adjuvant
    - advantages of, 627
    - clinical trials of, 627-629
    - disadvantages of, 627
    - in bladder cancer, 627-629
  - age and, 482
  - anthracenedione, in bladder cancer, 634
  - anthracycline, in bladder cancer, 634
  - antifol, in bladder cancer, 636
  - biomarkers for, 566
  - combination, *see* Combination chemotherapy
  - combined neoadjuvant and adjuvant, in bladder cancer, 629
  - evolution of, in breast cancer, 418-420
  - FDA-approved, 507
  - genetic engineering facilitating, 13-19
  - hematologic tolerance enhancement of, 13-14
  - intra-arterial neoadjuvant, in bladder cancer, 624
  - intraperitoneal, for gastric cancer, 384-385
  - intravesical, in bladder cancer, 599
  - Japanese adjuvant, 369-372
  - liposomal delivery of, 517-518
  - in metastatic melanoma, 746-750
  - neoadjuvant
    - bladder preservation and, 625
    - for gastric cancer, 385-386
    - in locally advanced bladder cancer, 622-624
    - in locally advanced gastric cancer, 403
  - oxazaphosphorine, in bladder cancer, 635
  - in pancreatic cancer, 267-268
  - perioperative intraperitoneal, 374-376
  - podophyllotoxin derivative, in bladder cancer, 635
  - predicting efficacy of, in breast cancer, 440-441
  - preoperative
    - in breast cancer, 420-422
    - intraperitoneal, 374-376
    - lumpectomy plus, 420-422
  - primary
    - animal tumor modeling for, 464-464
    - clinical trials of, 465-468
    - in operable breast cancer, 464-474
    - scope of, 465
  - randomized trials of, for advanced gastric cancer, 400-401
  - regimens of, in breast cancer, 481-482
  - remodeling of, in breast cancer, 420-422
  - supportive care v, in advanced gastric cancer, 401-402
  - surgically placed adjuvants for, 356-357
  - taxane, in bladder cancer, 635
  - in uveal melanoma, 766

## Chemotherapy (Continued)

- vinca alkaloid, in bladder cancer, 634-635
- Chimeric molecule, apoptosis and, 191
- Chlorambucil, as single agent, in metastatic breast cancer, 523
- Cholangiography, percutaneous, in pancreatic cancer, 201-202
- Cholangiopancreatography, endoscopic, 265-266
- in pancreatic cancer, 201-202
- Cholecystoenterostomy, reoperation following, 208
- Cholecystogastrostomy, 200
- Cholecystojejunostomy, 200
- Choledochenterostomy, reoperation following, 208
- Chromosome, regions of, lost or gained, in bladder cancer, 573-574
- Chromosome 1, dysplastic nevus syndrome-melanoma susceptibility and, 668
- Chromosome 3p, deletions of, in clear cell renal cell cancer, 24-25
- Chromosome 9, loss at, 577-578
- homozygous deletions at, in melanoma cell line, 26
  - melanoma susceptibility and, 668-669
- Cigarette smoking
- as bladder cancer risk, 537, 589
  - gastric cancer and, 288
  - pancreatic cancer and, 243-244
- Cisplatin
- in bladder cancer, 633-634, 637-638
  - in combination chemotherapy
    - for advanced gastric cancer, 398-399
    - for bladder cancer, 615, 622
    - for pancreatic cancer, 223
  - in combined modality therapy, for bladder cancer, 615
  - in gastric cancer, 374-376
  - in metastatic bladder cancer, 622
  - postoperative adjuvant, 381
- Cisplatin, cyclosporine, doxorubicin regimen
- in bladder cancer, 637-638
  - in metastatic bladder cancer, 622
- Cisplatin, dacarbazine, carmustine, megestrol regimen, in metastatic melanoma, 749
- Cisplatin, dacarbazine, carmustine, tamoxifen regimen, in metastatic melanoma, 746-748
- Cisplatin, dacarbazine, carmustine, tamoxifen, interferon- $\alpha$  regimen, in metastatic melanoma, 750
- Cisplatin, dacarbazine, carmustine, tamoxifen, IL-2, interferon regimen, in metastatic melanoma, 750
- Cisplatin, dacarbazine, tamoxifen regimen, in metastatic melanoma, 749
- Cisplatin, dacarbazine, tamoxifen, IL-2 regimen, in metastatic melanoma, 750
- Cisplatin, fluorouracil, alpha-interferon regimen, in bladder cancer, 640
- Cisplatin, methotrexate regimen, in bladder cancer, 636-637
- Cisplatin, methotrexate, doxorubicin regimen, intra-arterial, in bladder cancer, 624
- Cisplatin, methotrexate, vinblastine regimen, in bladder cancer, 638
- Cisplatin, tamoxifen regimen, in metastatic melanoma, 748-749
- Cisplatin, vinblastine, dacarbazine, IL-2, interferon- $\alpha$  regimen, in metastatic melanoma, 750
- Clark classification, 725
- Clark's nevus, 695-696



- Clodronate, 522
- Clonal nevus, 699-700
- Cockayne's syndrome, 50
- Codeine  
for moderate to severe pain, 235  
in pancreatic cancer, 234
- Coffee  
bladder cancer risk of, 539  
familial pancreatic cancer and, 252
- Collagenase  
interstitial, 319  
type IV, 319, 320
- Colloid carcinoma, of breast, 432
- Colorectal cancer  
hereditary nonpolyposis, familial pancreatic cancer and, 260  
oncogenesis in, 9-10  
p53 abnormalities in, 66-67  
p53 gene therapy in, 66-77
- Combination chemotherapy  
in bladder cancer, 636-640  
common, 223  
cost of, 629  
in metastatic bladder cancer, 622  
in pancreatic cancer, 222-224
- Combined modality therapy  
evolution of, 615-616  
in uveal melanoma, 766  
results of, 616-618
- Combined nevus, 699-700
- Comparative genomic hybridization, 573
- Computed tomography  
abdominal, 201  
in advanced bladder cancer staging, 555-556  
in gastric cancer, 327-332  
in gastric cancer staging, 330-332  
of gastric anatomy, 329-330  
in pancreatic cancer, 265  
technique of, in gastric cancer, 328-329  
transmural core biopsy guided by, 559
- Constipation, following opioids, 236-237
- Contrast agents, for MRI, in gastric cancer, 332-333
- Corpus, gastric, cancer in, 293
- Cost-effectiveness  
of bladder cancer screening, 593  
of gastric cancer detection, 325  
of radical cystectomy, 629
- Costimulatory signal, 754-755
- CT, see Computed tomography
- Cyclin D1, 677
- Cyclin-dependent kinase, 675-676  
in gastric cancer, 310-311
- Cyclin-dependent kinase inhibitor, 675
- Cyclin-dependent kinase-4 inhibitor gene, in uveal melanoma, 770
- Cyclins, in gastric cancer, 310-311
- Cyclophosphamide  
for immunopotentialization, of active specific immunization, 774-775  
in bladder cancer, 635, 637-638  
in breast cancer, 419, 481-482  
in breast cancer therapy, 468-470
- Cyclophosphamide (*Continued*)  
in metastatic bladder cancer, 622  
oral, in combination chemotherapy, 482  
overview of, 484-485  
as single agent, in metastatic breast cancer, 523
- Cyclophosphamide, doxorubicin regimen, in breast cancer, 419-420, 422
- CYP1A2, 540
- CYP2C19, 540
- CYP2D6, 540
- CYP3A4, 540
- Cystectomy  
partial, 610-611  
bladder preservation and, 625  
radical  
cost of, 629  
in bladder cancer, 605-606  
sexual function following, 607  
specimen of, 549  
salvage, 611-612
- Cystitis cystica, 547
- Cystoprostatectomy, radical, specimen of, 549
- Cystoscopy, 626
- Cytarabine  
in pancreatic cancer, 225  
postoperative adjuvant, in gastric cancer, 381
- Cytokine deaminase, 33
- Cytokine gene transfer, 16-17  
in situ, 93-97  
recombinant vaccinia virus, 96  
studies of, 92-93  
with vaccinia virus vectors, 88-100
- Cytology, fine needle aspiration, endoscopic ultrasonography in, 342-343
- Dacarbazine, in metastatic melanoma, 744
- Dacarbazine, carmustine, cisplatin, tamoxifen regimen, in metastatic melanoma, 746-748
- Dacarbazine, carmustine, cisplatin, tamoxifen, interferon- $\alpha$  regimen, in metastatic melanoma, 750
- Dacarbazine, carmustine, cisplatin, tamoxifen, interleukin-2, interferon regimen, in metastatic melanoma, 750
- Dacarbazine, carmustine, megestrol, cisplatin regimen, in metastatic melanoma, 749
- Dacarbazine, cisplatin, tamoxifen regimen, in metastatic melanoma, 749
- Dacarbazine, cisplatin, tamoxifen, IL-2 regimen, in metastatic melanoma, 750
- Dacarbazine, cisplatin, vinblastine, IL-2, interferon- $\alpha$  regimen, in metastatic melanoma, 750
- Dacarbazine, fotemustine regimen, in metastatic melanoma, 750
- Dacarbazine, tamoxifen regimen, in metastatic melanoma, 749
- DCC, tumors associated with, 8
- DEOD, 33
- Depressive disorders, in pancreatic cancer, 229-230
- Dermal melanocytosis, 768-769
- Desmoplastic neurotrophic melanoma, 705
- Developmental gene, characteristics of, 8
- DHAP, as single-agent chemotherapy, in pancreatic cancer, 221



- Diabetes  
  familial pancreatic cancer and, 257-259  
  pancreatic cancer and, 246-247
- Dichloromethylene bisphosphonate, 522
- Dietary carcinogens  
  gastric cancer and, 284-287  
  pancreatic cancer and, 243-244
- Dihydrofolate reductase, 440, 516, 48  
  in drug resistance gene transfer, 55-56
- Dinitrophenyl, 776
- DNA  
  chemical modification sites in, 85  
  direct injection of, 174-175  
  precipitated, with calcium phosphate, 176  
  vaccine, 105
- DNA conjugate, ligand, 177-178
- DNA exceeding rate, 5C, 564-565
- DNA ploidy analysis, in transitional cell carcinoma, 564-565
- Do Not Resuscitate order, 238-239
- Docetaxel, 506, 510-511  
  in bladder cancer, 635  
  in breast cancer, 489  
  in metastatic melanoma, 745  
  in pancreatic cancer, 225  
  phase II trials of, 511  
  as single agent, in metastatic breast cancer, 523
- Dominant-negative hypothesis, of p53, 68
- Dose-density, of chemotherapy, in breast cancer, 488-489
- Dosing, optimal, of chemotherapy, 481
- Douglas cavity, 375
- Doxil, 517
- Doxorubicin  
  in bladder cancer, 634, 637-638  
  in breast cancer, 469  
  in combination chemotherapy, 223, 481  
    for bladder cancer, 615  
  in combined modality therapy, for bladder cancer, 615  
  liposomal delivery of, 517-518  
  in metastatic bladder cancer, 622  
  methotrexate, cisplatin regimen, intra-arterial, in bladder cancer, 624  
  overview of, in breast cancer, 485-487  
  in pancreatic cancer, 214  
  postoperative adjuvant, 381  
  in postoperative adjuvant regimens, 383  
  preoperative, 470  
  as single-agent chemotherapy, 221  
    in metastatic breast cancer, 523
- Doxorubicin, cyclophosphamide regimen, in breast cancer, 419-420, 422
- Doxorubicin, vinblastine, thiotepa, fluoxymesterone regimen, in breast cancer, 486
- Droloxifene, 521  
  in breast cancer, 499
- Drug resistance gene  
  clinical trials of, 56-59  
  mechanisms of, 47-52  
  retroviral transduction of, 53  
  transfer of, 46-65
- DU-PAN-2, 203
- Ductal carcinoma in situ  
  atypical ductal hyperplasia v, 429  
  axillary dissection for, 451  
  biopsy for, 448-449  
  classification of, 430  
  current therapy of, 422-423  
  definition of, 448  
  excision alone for, 449-451  
  excision plus radiation for, 449  
  histopathology of, 429  
  management of, 446-452  
  mastectomy for, 450  
  natural history of, 447-448  
  randomized studies of, 450  
  surgery for, 449-451  
  therapeutic algorithms for, 450-451  
  treatment options for, 449-451
- Dye, chemical, as bladder cancer risk factor, 589
- Dysplastic nevus(i)  
  as cancer precursor, 683  
  as cancer risk marker, 683  
  as cancer simulant, 683  
  clinical features of, 682  
  histological features of, 683  
  as melanoma epidemiological risk factors, 684-685  
  melanoma incidence rates following, 686  
  as melanoma risk marker, 682-687  
  relative risk estimates for, 685
- Dysplastic nevus syndrome, 667-668  
  and melanoma susceptibility, chromosome 1 linkage of, 668  
  counts in, melanoma susceptibility and, 668
- E-cadherin  
  in gastric cancer, 309-310  
  in tumor cell invasion, 319, 320
- E2F1, 676
- Early Breast Cancer Trialists' Collaborative Group, 476-478
- Ebstein Barr virus, HSV-TK treatment of, 40
- Ectoposide, as single-agent chemotherapy, in pancreatic cancer, 221
- Edatrexate  
  phase II activity of, 516  
  as single agent, in metastatic breast cancer, 523
- EGFr oncogene, in bladder cancer, 578
- Elective lymph node dissection  
  nonrandomized trials in, results of, 720  
  ongoing randomized trials in, 721-722  
  prospective trials in, 720-721  
  randomized trials in, results of, 720-721  
  retrospective trials in, 720  
  theoretical considerations in, 719-720
- Endocrine therapy  
  in breast cancer, 494-505  
  resistance to, 495  
  response to, 495
- Endoscopic retrograde cholangiopancreatography, 265-266  
  in pancreatic cancer, 201-202
- Endoscopic ultrasonography  
  CT v, in gastric cancer staging, 340-341  
  in early gastric cancer, 341-342  
  in fine needle aspiration cytology, 342-343

- Endoscopic ultrasonography (*Continued*)  
 in gastric cancer, 336-346  
 in gastric cancer staging, 337-338  
 gastric cancer staging problems with, 341  
 gastric cancer survival by, 358  
 gastric depth penetration of, 340  
 of gastric five-layer wall structure, 337  
 instrumentation for, 336-337  
 in large gastric folds, 343-344  
 in linitis plastica, 343-344  
 in lymphoma, 343-344  
 in Menetrier's disease, 343-344  
 in pancreatic cancer, 266-267  
 in scirrhous carcinoma, 343-344
- Endoscopy, in gastric cancer detection, 325
- Endothelin-1, 673
- Endothelin-2, 673
- Endothelin-3, 673
- Endothelin-B receptor, 674
- Enucleation, in uveal melanoma, 765-766
- Enzyme system, to target drug effects, 14
- Eosinophilic globule, 699
- Epidermal growth factor receptor, 518
- Epirubicin  
 in bladder cancer, 634  
 in combination chemotherapy, for bladder cancer, 615  
 in combined modality therapy, for bladder cancer, 615  
 as single-agent chemotherapy, in pancreatic cancer, 221
- Episome, characteristics of, 180-182
- Epithelial growth factor, gastric cancer and, 302
- erb-B, functional classification of, 6
- erbB-2 oncogene, in bladder cancer, 578
- Estrogen(s)  
 in breast cancer, 498  
 mechanism of action of, 496
- Ethnic groupings, in bladder cancer, 537
- Etoposide  
 in bladder cancer, 635  
 in breast cancer, 469  
 in gastric cancer, 374-376  
 postoperative adjuvant, 381
- Excision repair cross complementing gene, 50-51
- Expression system, plasmid-based, rationale for, 173-174
- Fadrazole, 519  
 tamoxifen v, 520
- Familial adenomatous polyposis, familial pancreatic cancer and, 260
- Familial atypical mole and melanoma syndrome, 769
- Familial atypical multiple mole melanoma syndrome, 682
- Familial pancreatic cancer  
 alcohol and, 252  
 coffee and, 252  
 diabetes and, 257-259  
 differential genetic diagnosis in, 254-255  
 epidemiology of, 251-253  
 in extended families, 253-254  
 extrapancreatic cancers and, 254  
 familial adenomatous polyposis and, 260  
 familial pancreatic cancer and, 260-262  
 family aggregation in, 253
- Familial pancreatic cancer (*Continued*)  
 FAMMM syndrome and, 260-262  
 geographic variation in, 251  
 hereditary nonpolyposis colorectal cancer and, 260  
 hereditary pancreatitis and, 255-257  
 nutrition and, 251-252  
 pernicious anemia and, 259-260  
 population case-control studies in, 252-253  
 racial variation in, 251  
 tobacco and, 252
- Females  
 age-specific gastric cancer incidence in, 285  
 gastric cancer incidence in, 283
- Ferric ammonium citrate, 332
- Fibroblast growth factor family, 673-674
- Field cancerization, 562
- Field disease, 562
- Field effect, 716
- Fine needle aspiration cytology, endoscopic ultrasonography in, 342-343
- Flow cytometric analysis, in breast cancer, 432-433
- Flow cytometry, for screening, in bladder cancer, 593-594
- Fluorescent dye, as biomarker, 564-565
- Fluorescent in situ hybridization, 573
- Fluorouracil, 517  
 in breast cancer, 419, 481-482, 420, 468, 469, 470  
 in combination chemotherapy, 223-224  
 plus folinic acid, in combination chemotherapy, for advanced gastric cancer, 399-400  
 in gastric cancer, 375-376  
 infusional, in combination chemotherapy, for advanced gastric cancer, 397-398  
 overview of, 484-485  
 in pancreatic adenocarcinoma, 220-221  
 postoperative adjuvant, in gastric cancer, 381  
 as single-agent chemotherapy, 221  
 in metastatic breast cancer, 523
- Fluorouracil, alpha-interferon, cisplatin regimen, in bladder cancer, 640
- Fluorouracil, gallium nitrate regimen, in bladder cancer, 640
- Fluoxymesterone, vinblastine, doxorubicin, thiotepa regimen, in breast cancer, 486
- Folinic acid, 221  
 plus fluorouracil, in combination chemotherapy, for advanced gastric cancer, 399-400
- Fondation Bergonie trial, in breast cancer, 466
- Fotemustine, in metastatic melanoma, 745
- Fotemustine, dacarbazine regimen, in metastatic melanoma, 750
- French Cooperative Group trial, in breast cancer, 468
- Fruit, gastric cancer and, 287
- G-actin, 564-565, 567
- G-protein, 673
- Gadopentetate dimeglumine, 332
- Gallium nitrate, in bladder cancer, 636
- Gallium nitrate, fluorouracil regimen, in bladder cancer, 640
- Gallium nitrate, vinblastine, ifosfamide regimen, in bladder cancer, 640
- Ganciclovir, 32-34, 38-40  
 uses of, 40

- Ganglioside, 777-778  
plus interferon, in melanoma, 741-742
- Gastrectomy  
pancreas-preserving total, 367  
partial, 288  
pancreatic cancer following, 246  
pylorus-preserving distal, 366  
total v subtotal, in antral gastric adenocarcinoma, 354
- Gastric cancer  
adjuvant therapy for, 379-389  
advanced  
chemotherapy v supportive care in, 401-402  
combination chemotherapy in, 397-401  
prognostic factors in, 402-403  
radiographic findings in, 326-327  
radiotherapy in, 402  
treatment of, 397-406  
age distribution of, 282  
age-specific incidence of, by sex, 285  
alpha-tocopherol and, 285-287  
analytic epidemiology of, 284-288  
anatomic subsite distribution in, 282-284  
ascorbate and, 285-287  
beta carotene and, 286-287  
biological response modifiers in, 373-374  
Borrmann classification of, 298  
c-met gene in, 311-312  
cell kinetics in, 301  
cell lines in, 309, 317  
chemoimmunotherapy in, 373-374  
chronic atrophic gastritis and, 287-288  
classification of, 296-299  
CT of, 327-332  
curative resections of, American T and N stage distribution and, 354  
cyclin-dependent kinases in, 310-311  
cyclins in, 310-311  
diagnosis of, 325-327  
diet and, 284-287  
diffuse type of, development of, 295  
early, 295-296, 297  
classification of, 297  
endoscopic ultrasonography in, 341-342  
radiographic findings in, 325-326  
endoscopic ultrasonography in, 336-346  
endoscopic ultrasonography staging accuracy in, 338-340  
endoscopic ultrasonography staging of, 337-338  
epidemiology of, 281-291  
epithelial growth factors and, 302  
failure pattern in, 379-380  
fruit and, 287  
gastric polyps and, 293-294  
gastric ulcers and, 293  
gastritis and, 292-293  
genes altered in, 308  
genetic instability in, 307-309  
gross features of, 296  
H-2 blockers and, 288  
*Helicobacter pylori* and, 288  
hepatocyte growth factor in, 311-312  
histological features of, 298
- Gastric cancer (Continued)  
incidence of, 281, 283  
in selected populations, 353  
international distribution of, 282  
intestinal metaplasia and, 287-288  
intestinal type of, 293  
invasive, cytoplasmic projections and, 322  
Japanese adjuvant therapy for, 369-378  
Japanese surgical management of, 360-368  
Japanese surgical procedures for, 360-365  
laparoscopic staging of, 347-348  
laparoscopic ultrasonography in, 349-350  
local regional, treatment algorithm for, 387  
locally advanced, neoadjuvant chemotherapy in, 403  
lymph node dissection in, 355-356  
Menetrier's disease and, 294  
metastases in, 316-324  
CT of, 330  
metastasis-related genes in, 312  
metastatic signet cell, CT of, 331  
microscopic features of, 297-298  
molecular biological observations in, 307-315  
molecular biology of, 301-302  
mortality due to, 282  
MRI of, 332-334  
mucosal damage and, 287-288  
neoadjuvant therapy for, 379-389  
nitrites and, 285-287  
node-positive, American v Japanese survival in, 357  
OK-432 in, 373-374  
oncogenes in, 311-312  
orthotopic model for, 323  
overview of, 279-280  
partial gastrectomies and, 288  
pathologic considerations in, 281  
pathologic features of, 292-306  
pathology specimen in, examination of, 302-304  
perioperative intraperitoneal chemotherapy in, 374-376  
phenotypic features of, 292-306  
preoperative intraperitoneal chemotherapy in, 374-376  
prognostic factors in, 298-299  
progression of, mucosal damage and, 295  
protein-bound beta-D-glucan in, 373-374  
proximal, American incidence of, 353  
race distribution of, 282  
radiotherapy in, 390-396  
radiotherapy rationale in, 390  
randomized trials in, meta-analysis of, 372-373  
recurrence of, following surgery, 342  
replication errors in, 301-302  
risk factors for, 288  
salt and, 287  
scirrhous, radiographic findings in, 326-327  
sex distribution of, 282  
shelf-life proximal margin in, CT of, 331  
SK-GT cell lines in, 316, 317  
smoking and, 288  
spread of, 299-301  
staging of, 299-300, 327-334  
subtypes of, 293  
surgery for, in US, 352-359

- Gastric cancer (*Continued*)
- surgical management of, historical perspective of, 353-354
  - surgically placed adjuvants in, 356-357
  - survival in, by endoscopic ultrasound, 358
  - synchronous multicentric, 296-297
  - telomerase activity in, 308
  - time trends in, 282, 286
  - TNM staging of, 300, 338
  - TNM v Japanese classification in, 370
  - treatment algorithm for, 351
  - treatment of, 353
  - tumor cell invasion in, 317
    - factors associated with, 319
  - tumor doubling time in, 301
  - tumor extension and, 361
  - tumor suppressor genes and, 301-302
  - US age distribution of, 353
  - US diagnostic approaches to, 353
  - US incidence of, 284, 352-353
  - US v Japanese surgical results in, 356
  - US surgical management of, 352-359
  - US survival rates for, 284
    - by T stage, 356
    - by TNM stage, 357
  - vegetables and, 287
  - with lymphoid stroma, 300
  - World Health Organization classification of, 298
- Gastric emptying, following modified Whipple procedure, 205
- Gastric fold, large, endoscopic ultrasonography in, 343-344
- Gastric pseudotumor, 329
- Gastric resection
- adjacent organ resection with, survival benefit of, 362
  - combined, for adjacent structure vertical invasion, 361
  - current approaches to, 357-358
  - endoscopic mucosal, 365
  - extent of, 354
  - failure patterns following, 391
  - for invisible peritoneal metastasis, 364-365
  - for lymph node metastasis, 361-364
  - function preserving procedures and, 365-366
  - laparoscopic wedge, 366
  - margin of, 355
  - quality of life following, 365-366
  - to remove stomach wall horizontal extension, 360-361
  - strategies for, 361
  - survival following, 355
  - total v subtotal gastrectomy type of, 354-355
  - transdiaphragmatic approach in, 362
  - US v German v Japanese results of, 361
  - US v Japanese results of, 356
- Gastritis
- as gastric cancer risk factor, 292-293
  - autoimmune, 292
  - chronic atrophic, gastric cancer and, 287-288
- Gastro-esophageal junction, 329
- Gastrointestinal Study Group Trials, in pancreatic cancer, 213-215
- Gastrointestinal tract examination, upper, in gastric cancer detection, 325
- Gastrosocopy, in gastric cancer detection, 325
- Gemcitabine
- as single-agent chemotherapy, 221
  - in bladder cancer, 636
  - in pancreatic cancer, 225
- Gender, in melanoma, 728
- Gene
- mismatch repair, in gastric cancer, 301-302
  - tumor suppressor, in gastric cancer, 301-302, 309-310
- Gene delivery
- liposome-mediated, 176-177
  - particle-mediated, 175-176
- Gene targeting
- barriers to, 189-191
  - in cancer therapy, 188-193
- Gene therapy
- for benign conditions, 4-5
  - for cancer, 4-21
  - clinical trials of, 38-39
  - direct, 106
  - drug resistance, rationale for, 52-54
  - genetic immunotoxin for, 148-150
  - HSV-TK, 34-36
  - indirect, 106
  - intracellular antibody for, 150-152
  - mosaic theory of, 32-34
  - noninfectious gene transfer in, 172-181
  - overview of, 1-3
  - parvoviral vectors for, 159-168
  - systemic administration of, 157
  - targeting of, 11-12
  - tissue specific promoters in, 154-158
- Gene transfer
- antigen, 17
  - cationic lipid-mediated, 73-74
  - cytokine, 16-17
  - efficiency of, 12
  - for immunity development, 17
  - in situ in vivo, 17-18
  - mechanisms of, 10-11
  - technologies for, 174-178
  - to tumor cells in situ, 18
- Genetic abnormality, in pancreatic cancer, 245-246
- Genetic engineering, for chemotherapy facilitation, 13-19
- Genetic immunotoxin
- for cancer therapy, 148-149, 150
  - potential advantages of, 149-150
  - recombinant, 149
  - selective cytotoxicity of, 149
- Genitalia
- melanocytic nevus on, 700
  - melanosis of, 698
- Genome, instability of, 579-580
- Genomic hybridization, comparative, 573
- GI 9273, 214-215
- GI 9277, 214
- GI 9283, 215
- GI 9982, 215
- Giant melanocytic nevus, melanoma arising in, 706
- Glutathione S-transferase, 440
- Glutathione S-transferase M1, 541

- GM2, 778  
 Gompertzian kinetics, 488  
 Gonadotrophin release inhibitors, mechanism of action of, in  
   breast cancer, 496  
 Goserelin, 497, 502, 520  
 Granulocyte colony stimulating factor, 54  
 Granulocyte-macrophage colony stimulating factor, 54  
 Growth factor(s)  
   aberrant expression of, 676  
   fibroblast, 673-674  
   in gastric cancer, 311-312  
   hepatocyte, 311-312  
   keratinocyte, 311-312  
   mast-stem cell, 673  
   melanomas and, 673-681  
   signal transduction and, 674-675  
 GSP, functional classification of, 6  
  
 Hydroxyandrostenedione, 519  
 H-2 blockers, gastric cancer, and, 288  
 H-ras oncogene, 189-190  
   in bladder cancer, 578  
   functional classification of, 6  
   targeting of, 191  
 Halo nevus, 697-698  
 Halstedian paradigm  
   definition of, 416  
   mastectomy and, 418  
   replacement of, 416-418  
 Hammerhead ribozyme, 166  
 Hapten, 775  
 Harvey murine sarcoma virus, 54-55  
 Helicobacter pylori, gastric cancer, and, 288  
 Hematopoietic cell  
   chemoprotection of, 163-164  
   transduction of, with adeno-associated virus vectors, 163-164  
 Hematopoietic support, with chemotherapy, 487-488  
 Hematuria  
   in clinical evaluation, algorithm for, 554  
   for screening, in bladder cancer, 590-593  
 Hemorrhagic tumor necrosis, 36-38  
 Hen egg white lysozyme, 167  
 Hepatocellular cancer, p53 abnormalities in, 67-68  
 Hepatocyte growth factor, 673-674  
   in gastric cancer, 311-312  
 Hepatogastric ligament, 329  
 HER-2-*neu* receptor, 518-519  
 Hereditary nonpolyposis colorectal cancer, familial pancreatic  
   cancer and, 260  
 Hereditary syndrome, pancreatic cancer and, 246  
 Herpes simplex virus thymidine kinase gene, *see* HSV-TK gene  
 Heterozygosity, loss of, 573  
   in breast cancer, 438  
 Hexamethylmelamine, as single-agent chemotherapy, in pancre-  
   atic cancer, 221  
 HLA antigen, 17  
 HLA-B7, 17, 18  
 HMB-45, 691  
 Hoechst 33258, 564-565  
 Holliday junction, 5  
  
 Hoogsteen base pairing, 13  
 Hormonal therapy, in pancreatic cancer, 224-225  
 Hospice care  
   in pancreatic cancer, 238-239  
   referral to, 239  
 Hot spot codon, 67  
 Housekeeping gene, characteristics of, 8-9  
 HST, functional classification of, 6  
 HSV-TK gene, 14-15, 18, 33, 39-40  
   clinical protocols of, 41  
   delivery of, 34-36  
   as suicide gene, 167-168  
   uses of, 40  
 Human leukocyte antigen, 778  
 Hybridization  
   comparative genomic, 573  
   fluorescent in situ, 573  
 Hydrocodone, in pancreatic cancer, 234  
 Hydromorphone, for moderate to severe pain, 235  
 Hyperdiploidy, pancreatic cancer and, 246  
 Hyperplasia  
   atypical ductal, *v* duct carcinoma in situ, 429  
   atypical lobular, 428-429  
 Hyperthermia, in pancreatic cancer, 218  
 Hypophysectomy  
   in breast cancer, 497-498  
   mechanism of action of, 496  
  
 Idoxifene, in breast cancer, 499  
 Ifosfamide, 222  
   in bladder cancer, 635  
   in pancreatic cancer, 221  
 Ifosfamide, vinblastine, gallium nitrate regimen, in bladder  
   cancer, 640  
 IL-2, *see* Interleukin-2  
 Ileal neobladder, 608-609  
 Immune response  
   cell-mediated, generation of, 89-91  
   character of, 91-92  
 Immunization  
   current active tumor, strategies for, 136  
   elements essential to, 15  
   polynucleotide-mediated, 135-147  
     advantages of, 144-145  
     to CEA, *see* Carcinoembryonic antigen immunization  
     DNA constructs for, 141-142  
     immune mechanisms in, 139-141  
     mechanism of, 139  
     RNA constructs for, 142-144  
 Immunotherapy, in postoperative adjuvant regimens, for  
   gastric cancer, 385  
 Immunotherapy  
   adoptive, 18-19  
   with bacillus Calmette-Guerin, in bladder cancer, 599-601  
   clinical response in, laboratory correlates with, 757  
   gene transfer-based approaches to, 93  
   genetic engineering facilitating, 14  
   in uveal melanoma, 766  
 Immunotolerance, 756-757  
 Indiana pouch, 608

- Inducible promoter, 179-180
- Industrial carcinogens, pancreatic cancer and, 245
- Infiltrating lobular carcinoma, of breast, 432
- Institute Curie trial, in breast cancer, 466
- Integrins, in tumor cell invasion, 319
- Interferon, 221
  - adjuvant application of, 737-743
  - in bladder cancer, 601-602
  - IL-2 plus, in melanoma, 741
  - immunomodulation with, 737
  - vaccine plus, in melanoma, 741-742
- Interferon, dacarbazine, carmustine, cisplatin, tamoxifen, interleukin-2 regimen, in metastatic melanoma, 750
- Interferon- $\alpha$ , cisplatin, vinblastine, dacarbazine, IL-2 regimen, in metastatic melanoma, 750
- Interferon- $\alpha$ , dacarbazine, carmustine, cisplatin, tamoxifen regimen, in metastatic melanoma, 750
- Interferon- $\alpha$ -2, phase I-II trials of, in cutaneous melanoma, 737-738
- Interferon- $\alpha$ -2A
  - high-dose, in resected melanoma, 740
  - low-dose
    - in resected high-risk melanoma, 740-741
    - in resected intermediate-risk melanoma, 741
- Interferon- $\alpha$ -2B, high-dose, in resected melanoma, 738-739
- Interferon- $\gamma$ , phase I-II trials of, in cutaneous melanoma, 737-738
- Interleukin-2
  - interferon plus, in melanoma, 741
  - murine, 18-19
  - production of, 167
- Interleukin-2, cisplatin, vinblastine, dacarbazine, interferon- $\alpha$  regimen, in metastatic melanoma, 750
- Interleukin-2, dacarbazine, carmustine, cisplatin, tamoxifen, interferon regimen, in metastatic melanoma, 750
- Interleukin-2, dacarbazine, cisplatin, tamoxifen regimen, in metastatic melanoma, 750
- Interleukin-10, 92
- Internal ribosome entry site, 55
- Interstitial irradiation, in pancreatic cancer, 216-217
- Intestinal metaplasia, 294
  - gastric cancer and, 287-288, 292-293
- Intrabody
  - in cytosol, 151-152
  - in nucleus, 151-152
  - in secretory pathway, 150-151
- Intracellular antibody, for cancer gene therapy, 150-152
- Intravesical therapy
  - with bacillus Calmette-Guerin, complications of, 601
  - in bladder cancer, indications for, 598-599
- Irinotecan, 514
- Jaundice, in pancreatic cancer, 208-209
- Jewett-Strong-Marshall classification, of bladder cancer, 552
- Junctional nevus, 695
  - above macrophage band, 701
- Jurkat T cell line, 114
- K-ras, 13, 264
- K-sam gene, in gastric cancer, 311-312
- Kamino body, 699
- Keratinocyte, 656
- Keratinocyte growth factor, in gastric cancer, 311-312
- KI-67, 565
- Ki-67 antigen, in breast cancer, 433
- Ki-RAS, functional classification of, 6
- Kidney tumor, suppressor gene in, 24
- Kinetic model, of breast cancer, 488-489
- KIT ligand, 673
- Kock pouch, 608-609
- Krukenberg tumor, 330
- KS3, functional classification of, 6
- L-31, in gastric cancer, 312
- L-phenylalanine mustard, following radical mastectomy, 419
- Laminin receptor, in tumor cell invasion, 319
- Laparoscopic ultrasonography, in gastric cancer, 349-350
- Laparoscopy
  - applications of, 349
  - in gastric cancer staging, 347-348
  - in pancreatic cancer, 202
  - in peritoneal disease, 348
  - operative port sites in, 348
  - for peritoneal nodule, 349
  - for primary antral tumor, 349
  - serosal brushing with, for cytology, 349
  - surgical technique in, for gastric cancer staging, 348-349
- Lentigo
  - characteristics of, 693
  - solar, 694
- Lentigo maligna, 703-704
  - epidemiology of, 704
  - therapeutic considerations in, 704
- Letrazole, 520
- Leucovorin, 221, 517
- Leukemia, antisense strategies in, 78-87
- Leuprolide, 497, 502, 520
- Levorphanol, for moderate to severe pain, 235
- Lewis-X, 565, 567
- Li-Faumeni syndrome, 769
- Lichen sclerosis et atrophicus, anogenital nevus associated with, 701
- Ligamentum venosum, fissure, 329
- Linitis plastica, endoscopic ultrasonography in, 343-344
- Liposome(s), for chemotherapy delivery, 517-518
- Liposome-mediated gene delivery, 176-177
- Lobular carcinoma in situ
  - of breast, 446-452
  - invasive breast cancer following, 447
- Lomustine, 222
  - in combination chemotherapy, for pancreatic cancer, 223-224
  - in metastatic melanoma, 745
- Losoxantrone, 514
  - phase II trials of, 514
  - as single agent, in metastatic breast cancer, 523
- Loss of heterozygosity, in breast cancer, 438
- Lumpectomy
  - for duct carcinoma in situ, 422-423
  - preoperative chemotherapy plus, 420-422
  - radiotherapy following, for duct carcinoma in situ, 423
- Luteinizing hormone releasing hormone, in breast cancer, 502

- Lymph node(s)  
gastric cancer metastases to  
endoscopic ultrasonography for, 339-340  
incidence of, 364  
metastases to, polymerase chain reaction detection of, 723  
perigastric, numbering scheme for, 304  
regional, in breast cancer, 415
- Lymph node dissection  
elective, in melanoma, 719-724  
morbidity following, 355, 356  
mortality following, 355, 356  
para-aortic, 365  
survival following, 364
- Lymphadenectomy, selective, evolving role of, 722-723
- Lymphocyte(s),  
adoptive immunotherapy with, 18-19  
melanoma antigen recognized tumor infiltrating, 114-115
- Lymphoid cell, 114-115
- Lymphokine, production of, 91-92
- Lymphokine activated killer cell, 18-19
- Lymphoma, endoscopic ultrasonography in, 343-344
- M344, tumor-associated antigen, 564-565, 567
- Magnetic resonance imaging  
in advanced bladder cancer staging, 555-556  
of antral gastric carcinoma, 333  
of gastric cancer, 332-334  
negative-contrast agents for, 332-333  
positive-contrast agents for, 332  
spoiled gradient-recalled acquisition in, 333-334  
technique of, in gastric cancer, 332-333
- Major histocompatibility class I molecule, 110
- Major histocompatibility complex class I molecule, 754-755
- Males  
age-specific gastric cancer incidence in, 285  
gastric cancer incidence in, 283
- Malignancy, pre-, in breast cancer, 428-435
- Manganese chloride, 332
- MAP kinase cascade, 674
- Margin(s)  
associated with melanoma, 716  
evaluation of, in breast cancer, 455-456
- Marker, serologic, in pancreatic cancer, 202-203
- MAS, functional classification of, 6
- Mast-stem cell growth factor, 673
- Mastectomy  
breast-conserving therapy v, 454  
in current therapy, 422  
for ductal carcinoma in situ, 422-423, 450  
Halsted's radical, history of, 475  
Halstedian principles and, 418  
modified radical, 453-454, 469
- Maytansine, as single-agent chemotherapy, in pancreatic cancer, 221
- Mechlorethamine, in combination chemotherapy, for breast cancer, 481
- Medoxyprogesterone acetate  
in breast cancer, 500  
side effects of, 501
- Medullary carcinoma, of breast, 432
- Megestrol acetate  
in breast cancer, 500  
side effects of, 501
- Megestrol, dacarbazine, carmustine, cisplatin regimen, in metastatic melanoma, 749
- Melanocyte, 656  
normal, 673-674
- Melanocytic nevus  
giant, melanoma arising in, 706  
as melanoma risk factor, 684-685
- Melanoma  
acral lentiginous, 705-706  
active specific immunization in, 773-781  
cyclophosphamide immunopotential of, 774-775  
age in, 728  
American Joint Committee Cancer staging of, 729-730  
antigen-supplemented tumor cell in, 775-776  
atypical moles v, 690  
balloon cells in, 691  
biological considerations in, 707-708  
biopsy indications in, 714  
biopsy techniques in, 714-715  
case-control studies of, 650-653  
in cellular blue nevus, 706-707  
choroidal, 764  
clinical simulators of, 694  
cutaneous, classification of, 726  
cytologic features of, 689-690  
defined immunogen vaccines in, 776-778  
dermal cells of, 692  
dermal growth pattern of, 689  
desmoplastic, 691  
desmoplastic neurotrophic, 705  
and dysplastic nevus syndrome susceptibility, chromosome 1 linkage with, 668  
ECOG trial E1684 in, 738-740  
epidermal growth pattern of, 688-689  
European studies of, 653-656  
familial, 729  
familial cutaneous, genes in, 26-27  
follow-up restaging in, 729-730  
gender in, 728  
genetically engineered vaccines in, 778-779  
in giant melanocytic nevus, 706  
growth factors and, 673-681  
hereditary, cohort studies in, 685-686  
histological diagnosis of, 688-692  
histological features of, 688-691  
histological reporting of, 692  
histological simulators of, 694  
histological variants of, 692, 703-707  
human, receptor kinase in, 675-676  
immunologic factors in, 729  
incidence of, 667  
inherited predisposition to, 667-672  
interferon plus IL-2 in, 741  
interferon plus vaccine in, 741-742  
interferon- $\alpha$ -2 in, phase I-II trials of, 737-738  
interferon- $\gamma$  in, phase I-II trials of, 737-738  
intermediate thickness, elective lymph node dissection in, 719-724



Melanoma (*Continued*)

- intermittent sun exposure and, 657-658
  - study results in, 659
- intraepithelial, 689
- introduction to, 649
- invasive, 691
- iris, 764
- large ciliary body, 764
- with large junctional nests, 689
- lentigo maligna, 703-704
- local surgical treatment goals in, 715-716
- malignant
  - diagnosed during pregnancy, 735
  - differential diagnosis of, 693-702
  - in pregnancy, 734-736
  - prior pregnancies and, 735
  - prognostic indicators in, 709-710
  - radiobiological perspectives of, 760
  - radiotherapy in, 759-762
  - recurrences in, 710-711
  - stage I, risk factors in, 710
  - subsequent pregnancy and, 735
  - thick, survival in, 711
- margin with relevance to, 716
- metastatic
  - betulinic acid in, 745-746
  - carmustine in, 745
  - chemoimmunotherapy in, 750-751
  - cisplatin, tamoxifen regimen in, 748-749
  - cisplatin, vinblastine, dacarbazine, IL-2, interferon- $\alpha$  regimen in, 750
  - combination chemotherapy in, 746-750
  - dacarbazine in, 744
  - dacarbazine, carmustine, cisplatin, megestrol regimen in, 749
  - dacarbazine, carmustine, cisplatin, tamoxifen regimen in, 746-748
  - dacarbazine, carmustine, cisplatin, tamoxifen, interleukin-2, interferon regimen in, 750
  - dacarbazine, carmustine, cisplatin, tamoxifen, interferon- $\alpha$  regimen in, 750
  - dacarbazine, cisplatin, tamoxifen regimen in, 749
  - dacarbazine, cisplatin, tamoxifen, IL-2 regimen in, 750
  - dacarbazine, fotemustine regimen in, 750
  - dacarbazine, tamoxifen regimen in, 749
  - docetaxol in, 745
  - fotemustine in, 745
  - lomustine in, 745
  - nitrosoureas in, 745
  - paclitaxel in, 745
  - prognostic factors in, 728-729
  - single-agent chemotherapy in, 744-746
  - systemic chemotherapy in, 744-753
  - tamoxifen in, 744-745
  - taxanes in, 745
  - temozolomide in, 745
- mucosal lentiginous, 707
- NCCTG trial 83-7052 in, 740
- nodal metastases of, prognostic factors in, 727
- occupational sun exposure and, 658-659
  - study results in, 660

Melanoma (*Continued*)

- other malignant neoplasms v, 690-691
- with pagetoid epidermal involvement, 690
- peptides in, 742
- primary
  - Clark's staging in, 725
  - cytogenetics in, 726
  - histologic types of, 726-727
  - pathology of, 725-726
  - site of, 727
  - tumor thickness in, 725-726
    - and survival, 726
- primary cutaneous, prognostic factors in, 726
- prognosis in, 725-733
- race in, 728
- random
  - case-control studies in, 685
  - cohort studies in, 685-686
- recommended follow-up testing in, 731
- recommended staging tests in, 731
- regional lymph nodes in, 727-728
- resected, randomized controlled vaccine trials in, 742
- resected high-risk
  - adjuvant therapy of, 738
  - interferon- $\alpha$ -2A in, 740
  - interferon- $\alpha$ -2B in, 738-739
  - low-dose interferon- $\alpha$ -2A in, 740-741
- resected intermediate-risk, low-dose interferon- $\alpha$ -2A in, 741
- risk markers for, 682-687
- selective lymphadenectomy in, 722-723
- Sequel intergroup trial E1690 in, 740
- skin color in, 728
- small cells in, 691
- staging in, 725-733
  - cost-effectiveness tests for, 729
- study results in, 656-657
- sun exposure and, 650-666
- surgical management of, 714-718
  - by site, 717
- susceptibility to
  - chromosome 9P21 and, 668-669
  - nevus counts and, genetic analysis of, 668
- targeting to, 155-156
- thickness of, 709
  - surgical treatment by, 716-717
- ultraviolet radiation exposure and, 656
- unconventional cutaneous, 709-713
- unusual variants of, 703-708
- US studies of, 650-653
- uveal, *see* Uveal melanoma
- viral oncolysate in, 776
- WHO trial #16 in, 740-741
- whole tumor cell vaccine in, 773-774
- Melanoma antigen recognized tumor infiltrating lymphocyte, 114-115
- Melanoma-associated tumor antigen, 755
  - immunotherapy and, 754-758
- Melanosis, of genitalia, 698
- Melanotropin, 673

- Melphalan, as single-agent chemotherapy  
in metastatic breast cancer, 523  
in pancreatic cancer, 221
- Menetrier's disease  
endoscopic ultrasonography in, 343-344  
gastric cancer and, 294
- Menogrol, as single-agent chemotherapy, in pancreatic cancer, 221
- MET, functional classification of, 6
- Metaplasia  
gastric cancer and, 287-288, 292-293  
intestinal, 294
- Metastasis  
in gastric cancer, 316-324  
organ specificity of, prediction of, 441-442  
to lymph nodes, 339-340, 364  
to peritoneum, 364-365
- Metastasis-related gene, in gastric cancer, 312
- Methadone, for moderate to severe pain, 235
- Methotrexate  
escalated, in bladder cancer, 639  
high-dose, in combination chemotherapy, for advanced gastric cancer, 399-401  
in bladder cancer, 634, 638-639  
in breast cancer, 419, 420, 469, 470, 481-482  
in combination chemotherapy, 481  
for bladder cancer, 615, 622  
in combined modality therapy, for bladder cancer, 615  
overview of, 484-485  
postoperative adjuvant, in gastric cancer, 381  
as single agent, in metastatic breast cancer, 523
- Methotrexate, cisplatin regimen, in bladder cancer, 636-637
- Methotrexate, cisplatin, vinblastine regimen, in bladder cancer, 638
- Methotrexate, doxorubicin, cisplatin regimen, intra-arterial, in bladder cancer, 624
- Methyl-CCNU, 222  
in combination chemotherapy, 223  
in pancreatic cancer, 221
- Methylcholanthrene-induced 101 murine fibrosarcoma, 110
- Methylguanine methyltransferase, 48-49  
in drug resistance gene transfer, 56
- MGBG, as single-agent chemotherapy, in pancreatic cancer, 221
- Micrometastasis, of breast cancer, in bone marrow, 439-440
- Microsatellite, 716
- Mifepristone, 520
- Milan Cancer Institute trial, in breast cancer, 468-471
- Miniprobe, 342
- Minnesota Multiphasic Personality Inventory, 229
- Mitogen-activated protein kinase, 674
- Mitomycin  
in combination chemotherapy, 223  
in gastric cancer, 374-376  
in pancreatic cancer, 221  
in postoperative adjuvant regimens, for gastric cancer, 382-383  
postoperative adjuvant, in gastric cancer, 381  
as single-agent chemotherapy, 221  
in metastatic breast cancer, 523
- Mitotic figure, counting of, in breast cancer, 432
- Mitotic spindle, cytotoxic destruction of, 506-513
- Mitoxantrone, 515  
in bladder cancer, 634  
in breast cancer therapy, 468, 469  
in combination chemotherapy, 515  
dose intensity trials of, 515  
single-agent activity of  
in metastatic breast cancer, 523  
in pancreatic cancer, 221
- MLM locus, 669  
CDKN2 gene and, 669-670  
expressivity of, 669  
penetrance of, 669
- MMP-2, 319-320
- MMP-9, 320
- Model  
dose response, to sun exposure, 663-665  
kinetic, of breast cancer, 488-489  
molecular, of tumor progression, 683-684  
of tumorigenesis, 580
- Monoclonal antibody(ies), 518-519  
in breast cancer, 490  
in pancreatic cancer, 225
- Morphine  
for moderate to severe pain, 235  
in pancreatic cancer, 234
- Mosaic theory, of gene therapy, 32-34
- MRI, see Magnetic resonance imaging
- MTS1, 12, 669-670  
tumors associated with, 8
- Mucinous carcinoma, of breast, 432
- Mucosal lentiginous melanoma, 707
- Mucosectomy, 341
- Multiple drug resistance, 14
- Multiple drug resistance gene-1, 47-48
- Multiple drug resistance gene-2, 47
- Multiple drug resistance gene-3, 47
- Multiple drug resistance protein, 51  
in breast cancer, 440
- MYC, functional classification of, 6
- Myosin, in tumor cell invasion, 319
- N-acetylation, 541
- N-acetyltransferase 2, 540
- N-MYC, functional classification of, 6
- N-nitroso compounds, gastric cancer and, 284-286
- N-RAS, functional classification of, 6
- 2-Naphthylamine, exposure to, bladder cancer risk of, 537
- Narcotic analgesics, in pancreatic cancer, 234-236
- National Cancer Institute trial, in breast cancer, 467
- National Surgical Adjuvant Breast and Bowel Project, 415-416
- National Surgical Adjuvant Breast Project, 467
- Nausea, following opioids, 236-237
- Negative selectable marker, additional, 39-40  
classes of, 32
- Neoadjuvant therapy  
in locally advanced gastric cancer, 403  
in gastric cancer, 379-389
- NEU oncogene, overexpression of, in breast cancer, 438
- NEU-erb-B2, functional classification of, 6
- Neurofibromatosis type 1, 769
- Neurovascular bundle, 607

- Neutron irradiation, in pancreatic cancer, 216
- Nevus(i)
- acquired, 695
  - on acral skin, 701
  - anogenital, associated with lichen sclerosis et atrophicus, 701
  - atypical, 695-696
  - blue, 696
  - cellular blue, melanoma in, 706-707
  - clonal, 699-700
  - combined, 699-700
  - common acquired, 684
  - congenital, 693-695
  - deep penetrating, 700
  - dysplastic, *see* Dysplastic nevi
  - excisional biopsy of, 715
  - giant melanocytic, melanoma arising in, 706
  - halo, 697-698
  - junctional, above macrophage band, 701
  - melanocytic
    - compound, 60
    - on genitalia, 700
    - intra dermal, 690
    - junctional, 689
    - as melanoma risk factor, 684-685
  - as melanoma risk factor, 684-685
  - on palms, 700-701
  - persistent, 697-698
  - recurrent, 697-698
  - on soles, 700-701
  - Spitz's, 698-699
- NF-1, tumors associated with, 8
- NF-2, tumors associated with, 8
- Nitrites, gastric cancer and, 285-287
- Nitrosourea agents
- in metastatic melanoma, 745
  - in pancreatic cancer, 222
  - in postoperative adjuvant regimens, for gastric cancer, 382
- Nm23, in gastric cancer, 312
- Nonsteroidal anti-inflammatory drugs, in pancreatic cancer, 234
- Norethisterone, in breast cancer, 500
- Nottingham Prognostic Index, 442
- NSABP B-04 trial, 417
- NSABP B-06 trial, 417, 423
- NSABP B-13 trial, 420
- NSABP B-14 trial, 424
- NSABP B-17 trial, 423
- NSABP B-18 trial, 420-422
- NSABP B-22 trial, 485
- NSABP B-24 trial, 451
- NSABP P-1 trial, 424
- Nuclear pleomorphism, 692
- Nuclear pseudoinclusion, 692
- Nucleosome, 190
- Nucleotide excision repair, 50-51
- O<sup>6</sup>-alkylguanine DNA alkyltransferase, 48
- Octreotide, 224-225
- Ocular melanocytosis, 768-769
- with episcleral pigmentation, 769
- OK-432, in gastric cancer, 373-374
- Oligodeoxynucleotide(s)
- antisense, *ex vivo* treatment with, 83-84
  - biodistribution of, 81-82
  - characteristics of, 78-79
  - chemistry of, 85
  - delivery strategies for, 85
  - oncogene-targeted antisense, 83-84
  - pharmacokinetics of, 81-82
  - safety studies of, 82-83
  - systemic treatment with, 84-85
- Oligonucleotide, RNA-DNA chimeric, 189
- Onapristone, 521
- Oncogene
- activation of, 6-7, 28
  - definition of, 27-28
  - functional classification of, 6
  - history of, 5-7
  - in gastric cancer, 311-312
  - in pancreatic cancer, 263-264
  - mechanism of activation of, 7
  - viral, 29
- Oncogenesis
- in colorectal cancer, 9-10
  - mechanisms of, 9-10
- Oncotropic vector, 168
- Oophorectomy
- radiation-induced, 495-497
  - surgical, 495
- Opioid analgesic, in pancreatic cancer, 234-236
- Orbital exenteration, in uveal melanoma, 766
- Ovarian cancer, targeting to, 156-157
- Overexpression, oncogene activation by, 28-29
- Oxycodone
- for moderate to severe pain, 235
  - in pancreatic cancer, 234
- Oxygen enhancement ratio, 216
- P-cadherin, in gastric cancer, 309-310
- P-glycoprotein, 440, 47-48
- P-gp, in drug resistance gene transfer, 54-55
- P103, 675
- P130, 675
- P15, 310-311
- P16, 310-311, 684
- P21, 310-311
- p53, 565, 675
- adenovirus-mediated delivery of, preclinical studies with, 70-71
  - alterations of, 579-580
  - in bladder cancer, 576
  - in breast cancer, 438
  - cationic lipid complex with, 74
  - in colorectal cancer, 66-67
  - delivery of, adenoviral vectors for, 68-70
  - dominant-negative hypothesis of, 68
  - gene therapy with, *in vivo*, 66-77
  - in hepatocellular cancer, 67-68
  - as prognostic factor, 429, 433
  - rAd-, strategy for, 71-72
  - role of, model of, 572
  - tumors associated with, 8

- p53, 565, 675 (*Continued*)  
 in uveal melanoma, 770  
 vector systems for, 72-74  
 wild-type  
   biochemical properties of, 66  
   cellular function of, 66
- Paclitaxel, 506, 507-510  
 in bladder cancer, 635  
 in breast cancer, 489  
 doxorubicin plus, 509-510  
 in metastatic breast cancer, 508  
 in metastatic melanoma, 745  
 in pancreatic cancer, 225  
 as single agent, in metastatic breast cancer, 523
- PAI-1, 320-321
- Pain  
 assessment of, 232-233  
 moderate to severe, narcotic agents for, 235  
 in pancreatic cancer, 230-238  
 patient-controlled analgesia for, 235-236  
 pharmacologic treatment of, 233-237  
 syndromes of, 230-232  
 treatment of, 232-233
- PALA, *see* Phosphonacetyl-L aspartic acid
- Palliative care  
 in pancreatic cancer, 229-240  
 radiotherapy as, 237
- Palm, nevus on, 700-701
- Pamidronate, 522
- Pancreas, adenocarcinoma of, 220-228
- Pancreatectomy  
 regional, 206  
 total, survival following, 205-206
- Pancreatic cancer  
 biologic therapy in, 225  
 biopsy techniques in, 202  
 chemical exposure and, 245  
 chemotherapy in, 267-268  
 chronic pancreatitis and, 247  
 cigarette smoking and, 244-245  
 combination chemotherapy in, 222-224  
 common combination chemotherapy in, 223  
 CT in, 265  
 cytarabine in, 225  
 depressive disorders in, 229-230  
 diabetes and, 246-247  
 diagnosis of, 201-203  
 dietary carcinogens and, 243-244  
 differential diagnosis of, 260  
 docetaxel in, 225  
 endoscopic evaluation in, 201-202  
 endoscopic retrograde cholangiopancreatography in, 265-266  
 endoscopic ultrasonography in, 202, 266-267  
 epidemiology in, 241-250  
 external particle therapy in, 216  
 familial, *see* Familial pancreatic cancer  
 gemcitabine in, 225  
 high-risk screening in, diagnostic approach to, 267  
 hormonal therapy in, 224-225  
 hospice care in, 238-239  
 hyperthermia in, 218
- Pancreatic cancer (*Continued*)  
 incidence of, 241-243  
 industrial carcinogens and, 245  
 inherited predisposition to, 245-246  
 interstitial irradiation in, 216-217  
 intraoperative radiotherapy in, 217-218  
 introduction to, 199  
 laparoscopy in, 202  
 locally unresectable, treatment of, 214  
 markers in, 202-203  
 molecular biology of, 262-264  
 monoclonal antibodies in, 225  
 morbidity in, 207-208  
 mortality in, 207-208  
 neutron radiotherapy in, 216  
 noninvasive diagnostic tests in, 201  
 nonoperative palliative approaches in, 209  
 oncogenes in, 263-264  
 operative management of, 203-207  
 operative survival in, 207-208  
 paclitaxel in, 225  
 pain assessment in, 232-233  
 pain in, 230-238  
 pain syndromes in, 230-232  
 pain treatment in, 232-233  
 palliative care in, 229-240  
 papillary duct hyperplasia and, 247  
 pathology of, 262-264  
 PET in, 266  
 pharmacologic pain treatment in, 233-237  
 predisposing medical conditions to, 246-247  
 prosthetic stents in, 209  
 radiation and, 245  
 radiosensitizers in, 216  
 radiotherapy in, 213-219  
 risk factors in, 241-250  
 screening in, 264  
 serologic tests in, 265  
 single-agent chemotherapy in, 221  
 staging in, 201-203  
 surgical management of, 200-212  
 surgical palliation in, 208-209  
 surgical therapy in, 267  
 terminal care in, 238-239  
 transcuteaneous ultrasound in, 265
- Pancreatico-gastrostomy, 205
- Pancreaticoduodenal resection, 200
- Pancreaticoduodenectomy, 203  
 extended, 206  
 five-year survival following, 207  
 radical, 206
- Pancreaticojejunal anastomosis, 205
- Pancreatitis  
 chronic, pancreatic cancer and, 247  
 hereditary, 255-257
- Papanicolaou cytology, in transitional cell carcinoma, 564-565
- Papillary duct hyperplasia, pancreatic cancer and, 247
- Partial lamellar sclerouvectomy, in uveal melanoma, 765
- Parvovirus  
 autonomous, 161-162  
 biology of, 159

- Parvovirus (*Continued*)  
 vectors, to gene therapy, 162-163
- Passenger gene, 10-11
- Patey operation, 469
- Peptide(s)  
 antigenic, 778  
 melanoma-associated antigenic, 756
- Perflubron, 332
- Perfluorooctylbromide, 332
- PET, *see* Positron emission tomography
- Phase I-II trial  
 of interferon- $\alpha$ -2, in cutaneous melanoma, 737-738  
 of interferon- $\gamma$ , in cutaneous melanoma, 737
- Phosphonacetyl-L aspartic acid, 220-221
- Photocoagulation, laser, in uveal melanoma, 765
- Photodynamic therapy, photofrin-mediated, in bladder cancer, 602
- Pirarubicin, in bladder cancer, 634
- Piritrexim, in bladder cancer, 636
- Piroxantrone, 514
- Plasmid, episomal, 181
- Plasmid vector, replicating, 180-182
- Plasminogen activator inhibitor  
 in breast cancer, 439  
 in tumor cell invasion, 320
- Plasminogen activators, urokinase-type, in tumor cell invasion, 319
- Pleomorphic lobular carcinoma, of breast, 432
- Point mutation, oncogene activation by, 28
- Polymerase chain reaction, 438  
 technique with, 565
- Polyps, gastric, gastric cancer and, 293-294
- Positron emission tomography, in pancreatic cancer, 266
- Practice guidelines, for pain, 232
- PRAD-1, in breast cancer, 438
- PRb  
 alterations of, in bladder cancer, 576, 578-579  
 role of, model of, 572
- Prednisone, in combination chemotherapy, for breast cancer, 481
- Pregnancy  
 in malignant melanoma, 734-736  
 prior to malignant melanoma, 735
- Premalignancy, as breast cancer risk, 428-429
- Probe, ultrasonic, 342
- Procarbazine, in combination chemotherapy, for breast cancer, 481
- Progestins  
 in breast cancer, 500  
 mechanism of action of, 496
- Prognostic factor(s)  
 as adjuvant therapy guidelines, in breast cancer, 442  
 in bladder cancer, 629  
 in breast cancer, 429, 433, 437  
 critical evaluation of, 436-445  
 micrometastases as, 436-440  
 molecular, 437-440  
 morphologic, in breast cancer, 436-440
- Prognostic marker(s)  
 of biological behavior, 441  
 development of, challenges in, 442
- Proliferating cell nuclear antigen, 565
- Promoter  
 inducible, 179-180  
 tissue specific, 178-179
- Prostatic cancer, targeting to, 157
- Protein-bound beta-D-glucan, in gastric cancer, 373-374
- Proteinase inhibitor, in tumor cell invasion, 319
- Proteinases, in tumor cell invasion, 319
- Proteolytic enzyme, in breast cancer, 439
- Protocol G9173, 214
- Protooncogene, definition of, 6
- PS2 protein, in breast cancer, 441
- Pseudotumor, gastric, 329
- PTP gamma gene, intron-exon structure of, 25-26
- Pump-1, 320-321
- Putative metalloproteinase, 321
- Quadrantectomy, 458
- Quality of life, following gastric resection, 365-366
- Quantitative fluorescence image analysis, 565
- Race  
 gastric cancer incidence by, 282  
 in bladder cancer, 537  
 in melanoma, 728
- Radiation  
 pancreatic cancer and, 245  
 surgery plus, for ductal carcinoma in situ, 449-451
- Radiography  
 in advanced gastric cancer, 326-327  
 in early gastric cancer, 325-326  
 of gastric ulcers, 326  
 in scirrhous gastric cancer, 326-327  
 upper gastrointestinal, in gastric cancer detection, 325
- Radiosensitizer, in pancreatic cancer, 216
- Radiotherapy  
 in advanced gastric cancer, 402  
 adjuvant, results of, 392-393  
 adjuvant therapy plus, in pancreatic cancer, 214  
 bladder preservation and, 626-627  
 chemotherapy sequencing and, for invasive breast cancer, 460  
 clinical perspectives of, in malignant melanoma, 760-761  
 conventional, with or without chemotherapy, 215-216  
 external beam, 392  
 following lumpectomy, for duct carcinoma in situ, 423  
 following noncurative surgery, 393-394  
 in gastric cancer, 390-396  
 Gastrointestinal Study Group Trials of, 213-215  
 historical perspectives in, for malignant melanoma, 759-760  
 idealized treatment fields for, 392  
 interstitial, 216-217  
 intraoperative, 216-218, 394-395  
 in malignant melanoma, 759-762  
 multiple field technique in, 390  
 neutron, 216  
 palliative  
 in gastric cancer, 395  
 in pancreatic cancer, 237  
 in pancreatic cancer, 213-219  
 postoperative adjuvant, 383-384  
 in gastric cancer, 381  
 preoperative, 216

- Radiotherapy (*Continued*)  
 radical, cost of, 629  
 rationale for, in gastric cancer, 390  
 in resected tumors, 215  
 surgery plus, relative timing of, 484  
 technical aspects of, 390-391  
 three dimensional treatment planning with, 390-391  
 toxicity of, 391-392  
 in unresectable disease, 215-218  
 in uveal melanoma, 765
- RAF, functional classification of, 6
- RAS oncogene  
 in bladder cancer, 578  
 in uveal melanoma, 770
- RAS peptide, mutant, immunogenicity of, 123-125
- RAS p21 oncogene  
 amino acid substitutions and, 121  
 point-mutated, as immunotherapy targets, 121  
 products of, 121-126  
 tumorigenesis and, 118-120
- Razoxane, as single-agent chemotherapy, in pancreatic cancer, 221
- RB, alterations of, in bladder cancer, 576
- RBI, tumors associated with, 8
- Renal cell cancer, chromosome 3p depletions in, 24-25
- Replication error, in gastric cancer, 301-302, 307-309
- Representational difference analysis, 263
- Research  
 in breast cancer, 414-427  
 in 1960s, 414-416
- Respiratory depression, following opioids, 237
- RET, functional classification of, 6
- Retinoblastoma, 675  
 hereditary, 575
- Retrograde cholangiopancreatography, endoscopy with, in pancreatic cancer, 201-202
- Retroviral vector, for p53, 73
- Retrovirus, definition of, 6
- Ribosomal S kinase, 674
- Ribozyme, 165-166
- Rous sarcoma virus, 6
- Royal Marsden trial, in breast cancer, 466-467
- Rubber tire industry, bladder cancer risk of, 537
- S phase determination, in breast cancer, 432-433
- S-100 protein, 691
- Salt, gastric cancer and, 287
- Scatter factor, 673-674
- Schistosoma haematobium*, 542
- Schistosomiasis infection, as bladder cancer risk factor, 539-540
- Schistosomiasis haematobium*, 542
- Scirrhous carcinoma, endoscopic ultrasonography in, 343-344
- Screening  
 biomarkers for, in bladder cancer, 594  
 cytology for, in bladder cancer, 593-594  
 flow cytometry for, in bladder cancer, 593-594  
 for chronic diseases, principles of, 585-587  
 hematuria for, in bladder cancer, 590-593  
 in high-risk populations  
 for bladder cancer, 594-595  
 for pancreatic cancer, 267
- Semustine, 222
- Senescence, cellular, 577-579
- Serologic test, in pancreatic cancer, 265
- Sex, gastric cancer incidence by, 282, 283
- Sexual function, following radical cystectomy, 607
- Signal 2, 757
- Single-strand confirmation polymorphism, 438
- SK-GT-5, 323
- Skin, sensitivity of, to ultraviolet radiation, 656, 663
- Skin color, in melanoma, 728
- Skipper's hypothesis, 421
- Sloan-Kettering Gastric Tumor cell lines, 316-324
- Smoking, cigarette, 589  
 bladder cancer risk of, 537-538  
 gastric cancer and, 288  
 pancreatic cancer and, 243-244
- Solar keratosis, melanocytic proliferation in, 701
- Solar lentigines, melanocytic proliferation in, 701
- Solar lentigo, 694  
 melanocytic proliferation in, 701
- Sole, nevus on, 700-701
- Somatostatin, 224-225
- Spindle poisons, 506-513
- Spirogemium, as single-agent chemotherapy, 221
- Spironolactone, in combination chemotherapy, 223
- Spitz's nevus, 698-699
- Splanchnic nerve block, 238
- Spoiled gradient-recalled acquisition, in steady state, 333
- Steel factor, 673
- Stem cell, 115  
 with chemotherapy, 487-488
- Stem cell factor, 55
- Stem cell growth factor, 673
- Stomach  
 cancer of, see Gastric cancer  
 cell necrosis in, 296  
 epithelial dysplasia of, 295  
 five-layer wall structure of, endoscopic ultrasonography for, 337  
 lymphatic channels from, 363  
 polyps of, cancer and, 293-294  
 postsurgical, cancer and, 294-295  
 regional lymph node of, by N classification, 363  
 surgery of, see Gastric resection  
 ulcer of, cancer and, 293  
 wall of, laparoscopic wedge resection of, 366
- Streptozocin, 222  
 in combination chemotherapy, 223  
 as single-agent chemotherapy, 221
- Strip biopsy, 341
- Stromelysin(s), in tumor cell invasion, 319-321
- Stromelysin-2, 321
- Strontium, 522-523
- Suicide gene, 14, 167-168  
 in situ use of, 31-45  
 therapy with, benefits of, 40  
 types of, 33
- Sun exposure  
 dose response models to, 663-665  
 intermittent

- Sun exposure (*Continued*)  
 melanoma and, 657-658  
 relative risks for, 658  
 intermittent v occupational, 659-660  
 relative risks for, 661  
 melanoma and, 650-666  
 occupational, 658-659  
 relative risks for, 660  
 study results in, 660  
 total, 660-662  
 relative risks for, 661  
 study results in, 662
- Sunburn  
 history of, 662-663  
 relative risks for, 662  
 study results in, 664
- Superoxide dismutase, 51-52
- Suppressor gene  
 identification of, 23  
 in kidney tumors, 24  
 mutations in, 25-26
- Surgery  
 in bladder cancer, 605-613  
 in breast cancer, 420  
 breast-conserving, techniques of, 458  
 for ductal carcinoma in situ, 449-451  
 for gastric cancer, in US, 352-359  
 gastric cancer recurrence following, 342  
 margin evaluation following, 455-456  
 noncurative, in gastric cancer, radiotherapy following, 393-394  
 optimal timing of, 459-460  
 palliative, 208-209  
 in pancreatic cancer, 200-212, 267  
 radiation plus, for ductal carcinoma in situ, 449-451  
 radiotherapy plus, relative timing of, 484  
 for urinary tract reconstruction, 606-610  
 wide excision, for invasive breast cancer, 460
- Sweeteners, artificial, bladder cancer risk of, 539
- T cell  
 activation of, 90, 754-755  
 antitumor, genetic manipulation of, 111-114  
 cytotoxic, generation of, 15  
 therapy with, genetic approaches to, 109
- T cell receptor, 120-121
- T cell response, 89-91
- T effector cell  
 cytokine gene transfection of, 112-113  
 genetic engineering of, 114-115  
 modification of, with signal transduction genes, 113  
 redirection of, with chimeric receptor gene, 113-114
- T lymphocyte, 15, 17  
 cytotoxic, tumor cell interaction with, 15, 17
- Tamoxifen, 224-225, 419, 521 (*Continued*)  
 adjuvant, 482-483, 499  
 in breast cancer prevention, 423-424  
 dosing of, 499  
 ductal carcinoma in situ and, 451  
 fadrazole v, 520  
 history of, 498-499  
 mechanism of action of, 496  
 in metastatic melanoma, 744-745  
 optimal duration of, 479  
 overview of, 478-481  
 in postoperative adjuvant regimens, for gastric cancer, 385  
 side effects of, 500
- Tamoxifen, cisplatin regimen, in metastatic melanoma, 748-749
- Tamoxifen, dacarbazine regimen, in metastatic melanoma, 749
- Tamoxifen, dacarbazine, carmustine, cisplatin regimen, in metastatic melanoma, 746-748
- Tamoxifen, dacarbazine, carmustine, cisplatin, interferon- $\alpha$  regimen, in metastatic melanoma, 750
- Tamoxifen, dacarbazine, carmustine, cisplatin, interleukin-2, interferon regimen, in metastatic melanoma, 750
- Tamoxifen, dacarbazine, cisplatin regimen, in metastatic melanoma, 749
- Tamoxifen, dacarbazine, cisplatin, IL-2 regimen, in metastatic melanoma, 750
- Taxane(s), 422  
 in metastatic melanoma, 745
- Tegafur-uracil  
 in gastric cancer, 374-376  
 postoperative adjuvant, 381
- Telomerase  
 alterations in, 579  
 in gastric cancer, 308
- Telomere, alterations in, 579
- Temozolomide, in metastatic melanoma, 745
- Teniposide, in bladder cancer, 635
- Terminal care, in pancreatic cancer, 238-239
- Testosterone-dihydrotestosterone ratio, 203
- Textile dye industry, bladder cancer risk of, 537
- TH1, definition of, 91
- TH2, definition of, 91
- Thiotepa, vinblastine, doxorubicin, flouxymesterone regimen, in breast cancer, 486
- Thirty-one-kd lactoside-binding lectin, in gastric cancer, 312
- TIMP-1, 320
- TIMP-2, 320
- Tissue inhibitor metalloproteinase, in tumor cell invasion, 320
- Tissue specific promoter, 178-179  
 in gene therapy, 154-158
- TLC D-99, 517
- TNM staging, of gastric cancer, 300
- Tobacco, familial pancreatic cancer and, 252
- Topoisomerase I, 513
- Topoisomerase II, 513-514
- Topotecan, 514  
 as single-agent chemotherapy, in metastatic breast cancer, 523
- Toremifene, 521  
 in breast cancer, 499
- TP53  
 alterations of, in bladder cancer, 576  
 mutations of, spectrum of, 577
- Transdominant molecule, delivery of, 164-166
- Transduction, mechanism of, 10
- Transfection, mechanism of, 10
- Transitional cell carcinoma, 542, 547-548  
 biomarkers for, 563-564



- Transitional cell carcinoma, 542, 547-548 (*Continued*)  
  clinical evaluation in, algorithm for, 554  
  in situ, 551  
  nonpapillary flat, 549-551  
  papillary, 550
- Translocation, oncogene activation by, 29
- Transpupillary thermotherapy, in uveal melanoma, 765
- Transurethral resection of bladder tumor, 552-555  
  bladder preservation and, 625-627
- Trimetrexate, 516  
  in bladder cancer, 636
- Triptorelin, 497, 502
- TRK, functional classification of, 6
- Tubular carcinoma, of breast, 431-432
- Tumor  
  gene-modified, for antitumor T cell, 109-111  
  -induced suppressive activity, 92  
  progression of, molecular models of, 683-684  
  -specific transplantation antigen, 90
- Tumor antigen, production of, 15-16
- Tumor cell  
  cytotoxic T lymphocyte interaction with, 15, 17  
  genetic alterations in, detection of, 22-30
- Tumor doubling time, in gastric cancer, 301
- Tumor infiltrating lymphocyte, 18-19  
  from gene-modified tumor, 109-110  
  marking study, 111-112
- Tumor marker, prognostic, in breast cancer, 421-422
- Tumor suppressor gene, 575-577  
  associated with bladder cancer, 542  
  characteristics of, 7-8  
  in gastric cancer, 301-302, 309-310  
  role of, in bladder cancer, 575  
  tumors associated with, 8
- Tumor vaccine  
  animal studies of, 102-104  
  animal study conclusions in, 104  
  DNA, 105  
  ex vivo *in vivo* approach to, 105  
  gene-modified, lymph node cells sensitized with, 110-111  
  in humans, 104-105  
  immunotherapy with, 101-107  
  rationale for, 101-102  
  targets for, mutant ras epitopes as, 118-134  
  therapeutic benefit of, 103
- Tumorectomy, 458
- Tumorigenesis, genetic pathways in, model of, 580
- Two-hit hypothesis, 7-8
- Tyrosinase-related protein 1 gene, 154
- TZT, as single-agent chemotherapy, in pancreatic cancer, 221
- Ulcer  
  benign v malignant gastric, radiographic findings in, 326-327  
  gastric, gastric cancer and, 293  
  malignant gastric, radiography of, 328
- Ultrasonic probes, 342
- Ultrasonography  
  in advanced bladder cancer staging, 555-556  
  endoscopic, 202  
  in gastric cancer, 336-346  
  laparoscopic, 349-350
- Ultrasonography (*Continued*)  
  in pancreatic cancer, 201, 266-267  
  transcutaneous, 265
- Ultraviolet radiation  
  exposure to, and melanoma, 656  
  skin sensitivity to, 663
- Uracil-tegafur  
  in gastric cancer, 374-376  
  postoperative adjuvant, in gastric cancer, 381
- Ureterosigmoidostomy, 607
- Urinary bladder  
  papillary urothelial neoplasms of, 548-549  
  preservation of  
    concerns regarding, 618-619  
    goals of, 614  
    neoadjuvant chemotherapy and, 625  
    partial cystectomy and, 625  
    patient selection for, 614-615  
    radiation therapy and, 626-627  
    strategies for, 610-612  
    transurethral resection and, 625-627  
  primary tumors of  
    classification of, 548  
    pathology of, 547-548  
  transitional cell carcinoma of, surgical therapy for, 605-613  
  wall of, 547
- Urinary tract, reconstruction of, 606-610
- Uroepithelial cell, transformation of, 574
- Urokinase-type plasminogen activator, in breast cancer, 439
- Urothelial tumor, diagnosis of, cytology role in, 560
- Urothelium, 546
- Uveal melanoma  
  bilateral, 769  
  chemotherapy in, 766  
  classification of, 769-770  
  clinical features of, 763  
  combined modality therapy in, 766  
  conditions predisposing to, 768  
  cyclin-dependent kinase-4 inhibitor gene in, 770  
  cytogenetic studies in, 770  
  diagnostic approaches to, 763  
  enucleation in, 765-766  
  familial, 768  
  genetic aspects of, 768-772  
  germline mutations in, 770  
  immunotherapy in, 766  
  laser photocoagulation in, 765  
  local resection in, 765  
  management of, 763-764  
  molecular genetic studies in, 770  
  observation in, 764-765  
  orbital exenteration in, 766  
  p53 in, 770  
  primary, proposed genetic classification for, 770  
  prognosis in, 766  
  radiotherapy in, 765  
  ras oncogene in, 770  
  transgenic models in, 770  
  transpupillary thermotherapy in, 765  
  typical kindred with, 769  
  in young patients, 769

- Vaccination, elements essential to, 15
- Vaccine
- genetically engineered for cancer, 778-779
  - interferon plus, in melanoma, 741-742
  - recombinant virus, 16
  - tumor, *see* Tumor vaccine
  - whole tumor cell, 773-774
- Vaccinia virus, 16
- infects with, 95
- Vaccinia virus vector, in situ cytokine gene transfer with, 88-100
- Vector
- development of, 159
  - episomal, replication-competent, 181
  - infectious, viral-based, 172-173
  - oncogenic, 168
  - plasmid, replicating, 180-182
  - plasmid expression, 178-182
  - plasmid-based, gene transfer technologies for, 174-178
  - standard plasma, 181
- Vegetables, gastric cancer and, 287
- VHL, tumors associated with, 8
- Vinblastine
- in bladder cancer, 634
  - in combination chemotherapy, for bladder cancer, 622
- Vinblastine, cisplatin, dacarbazine, IL-2, interferon- $\alpha$  regimen, in metastatic melanoma, 750
- Vinblastine, cisplatin, methotrexate regimen, in bladder cancer, 638
- Vinblastine, doxorubicin, thiotepa, fluoxymesterone regimen, in breast cancer, 486
- Vinblastine, ifosfamide, gallium nitrate regimen, in bladder cancer, 640
- Vincristine
- in bladder cancer, 634-635
- Vincristine (*Continued*)
- in combination chemotherapy
    - for bladder cancer, 615
    - for breast cancer, 481  - in combined modality therapy, for bladder cancer, 615
  - as single agent, in metastatic breast cancer, 523
- Vinorelbine, 506-507, 511-513
- in bladder cancer, 635
  - in breast cancer, 468, 489
  - in combination chemotherapy, 513
  - melphalan v, 513
  - phase II trials of, 512
  - as single agent, in metastatic breast cancer, 523
- Viral gene, as oncogene, 29
- Viral oncolysate, in melanoma, 776
- Viral xenogenization, 775
- Vomiting
- following opioids, 236-237
  - in pancreatic cancer, 208-209
- Vorazole, 520
- VZV-TK, 33
- Whipple procedure, 200
- pylorus-preserving modification of, 205
  - standard, 204
- World Health Organization classification, of gastric cancer, 298
- WT-1, tumors associated with, 8
- Xanthine-guanine phosphoribosyltransferase, 33
- Xenogenization, viral, 775
- Xeroderma pigmentosum, 50
- XGPRT, 33
- Yagoda, Alan, in memoriam, 535

